## Before the State Corporation Commission of the State of Kansas

#### IN THE MATTER OF THE APPLICATION OF EVERGY KANSAS CENTRAL, INC. AND EVERGY KANSAS SOUTH, INC. FOR APPROVAL TO MAKE CERTAIN CHANGES IN THEIR CHARGES FOR ELECTRIC SERVICE PURSUANT TO K.S.A. 66-117.

## **EVERGY KANSAS CENTRAL, INC. AND EVERGY KANSAS SOUTH, INC.**

Docket No. 25-EKCE-294-RTS

**Testimony and Exhibits of** 

J. Randall Woolridge, Ph. D. For the Citizens' Utility Ratepayer Board

June 6, 2025

#### Docket No. 25-EKCE-294-RTS

## Direct Testimony of J. Randall Woolridge, Ph.D.

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JRW-1	Recommended Cost of Capital
JRW-2	Public Utility Capital Cost Indicators
JRW-3	Summary Financial Statistics for Proxy Group
JRW-4	Capital Structure and Debt Cost Rates
JRW-5	DCF Study
JRW-6	CAPM Study
JRW-7	The Company's Proposed Cost of Capital
JRW-8	Investment Firms' Expected Equity Market Annual Returns
JRW-9	GDP and S&P 500 Growth Rates

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#### I. <u>INTRODUCTION</u>

1 2	Q.	PLEASE STATE YOUR FULL NAME, ADDRESS, AND OCCUPATION.
3	A.	My name is J. Randall Woolridge, and my business address is 120 Haymaker Circle, State
4		College, PA 16801. I am a Professor of Finance and the Goldman, Sachs & Co. and Frank
5		P. Smeal Endowed University Fellow in Business Administration at the University Park
6		Campus of the Pennsylvania State University. I am also the Director of the Smeal College
7		Trading Room and President of the Nittany Lion Fund, LLC. I provide a summary of my
8		educational background, research, and related business experience in Exhibit JRW-2.
9	Q.	ON WHOSE BEHALF ARE YOU TESTIFYING?
10	A.	I have been asked by the Citizens' Utility Ratepayer Board ("CURB") to provide an opinion
11		as to the overall fair rate of return or cost of capital for the Kansas jurisdictional electric utility
12		operations of Evergy Kansas Central, Inc. and Evergy Kansas South, Inc. (the "Companies"
13		and/or "EKC"), wholly-owned subsidiaries of Evergy, Inc. ("EVRG").1
14	Q.	HOW IS YOUR TESTIMONY ORGANIZED?
15	A.	The following outlines my testimony:
16		• First, I summarize my cost of capital recommendation for the Companies and review
17		CURB's primary areas of contention on the Companies' position.
18		• Second, I provide an assessment of capital costs in today's capital markets.
19		• Third, I discuss the selection of proxy groups for estimating the cost of equity capital for
20		the Companies.

<sup>&</sup>lt;sup>1</sup> In my testimony, I use the terms "rate of return" and "cost of capital" interchangeably. This is because the required rate of return of investors on a utility company's capital is the cost of capital.

1		• Fourth, I discuss the Companies' recommended capital structure and debt cost rates.
2		• Fifth, I provide an overview of the concept of the cost of equity capital and then estimate
3		the equity cost rate for the Companies.
4		• Finally, I critique the Companies' rate of return analysis and testimony.
5		
		II. <u>SUMMARY OF RECOMMENDATIONS</u>
6		
7		A. Overview
/	0.	WHAT COMPRISES A PUBLIC UTILITY'S "RATE OF RETURN"?
9	A.	A public utility's overall rate of return has three main components:
10		(1) capital structure ( <i>i.e.</i> , ratios of short-term debt, long-term debt, preferred stock
11		and common equity);
12		(2) cost rates for short-term debt, long-term debt, and preferred stock; and
13		(3) common equity cost, otherwise known as return on equity ("ROE").
14	0.	WHAT IS A PUBLIC UTILITY'S ROE INTENDED TO REFLECT?
15	A.	ROE is described most simply as the allowed rate of profit for a regulated company. In a
16		competitive market, a variety of factors determine a company's profit level including the
17		state of the economy the degree of competition a company faces, the ease of entry into its
18		markets the existence of substitute or complementary products/services, the company's
10		a set structure the impact of technological changes, and the supply and demand for its
19		cost structure, the impact of technological changes, and the supply and demand for its
20		services and/or products. For a regulated monopoly, the regulator determines the level of
21		profit available to the public utility. The United States Supreme Court established the

1	guiding principles for determining an appropriate level of profitability for regulated public
2	utilities in two cases: (1) Hope and (2) Bluefield. <sup>2</sup> In those cases, the Court recognized that
3	the fair rate of return on equity should be:
4	(1) comparable to returns investors expect to earn on other investments of similar
5	risk;
6	(2) sufficient to assure confidence in the Companies' financial integrity; and
7	(3) adequate to maintain and support the Companies' credit and to attract capital.
8	Accordingly, finding the appropriate ROE for a regulated utility requires
9	determining the market-based cost of capital. The market-based cost of capital for a
10	regulated firm represents the return investors could expect from other investments, while
11	assuming no more and no less risk. The purpose of the economic models and formulas in
12	cost of capital testimony, such as my testimony's Discounted Cash Flow ("DCF") Model
13	and the Capital Asset Pricing Model ("CAPM"), is to use market data of firms with similar
14	risk to estimate the rate of return on equity investors require for this specific risk-class of
15	firms ( <i>i.e.</i> , regulated utilities), in order to set an appropriate ROE for a regulated firm.
16	
	B. Summary of Positions

# 17 18 Q. PLEASE REVIEW YOUR PROPOSED RECOMMENDATIONS REGARDING 19 THE APPROPRIATE RATE OF RETURN FOR THE COMPANIES.

20 A. I provide the Companies' proposed capital structure and debt and equity cost rates in Table

<sup>&</sup>lt;sup>2</sup> Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) (hereinafter "Hope"); Bluefield Water Works and Improvement Co. v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923) (hereinafter "Bluefield").

1	1. The Companies' witness, Mr. Ley, has proposed a capital structure consisting of 48.03%
2	long-term debt and 51.97% equity for EKC. Mr. Ley has proposed a long-term debt cost
3	rate of 4.641% for EKC. Ms. Ann Bulkley proposes a ROE of 10.50% for the Companies.
4	Based on these components, Mr. Ley has proposed an overall rate of return or cost of capital
5	of 7.69% for EKC.

6	
7	

8

Table 1Companies' Rate of Return RecommendationsEKC's Rate of Return Recommendation

	Capitalization	Cost	Weighted
<b>Capital Source</b>	Ratio	Rate	Cost Rate
Long-Term Debt	48.03%	4.641%	2.23%
Common Equity	<u>51.97%</u>	<u>10.50%</u>	<u>5.46%</u>
Total	100.00%		7.69%

9

10 I provide my proposed cost of capital for the Companies in Table 2. I have evaluated the Companies' proposed capital structure as well as the capital structures of EKC and 11 12 EVRG. The Companies' proposed capital structure includes a higher common equity ratio 13 and less financial risk than the averages of the two proxy groups. EVRG has \$2.7 billion 14 in debt at the holding company level. If I allocate 50% of this debt to EKC, the resulting 15 revised capital structure includes a common equity ratio of 45.93%. While this figure is still higher than the average of the proxy groups, in the interest of conservatism I will 16 17 employ a capital structure with a common equity ratio of 50.0%. I am using a blended 18 (EKC and EVRG) cost of long-term debt of 4.65%. I have applied the DCF Model and the 19 CAPM to a proxy group of publicly-held electric utility companies ("Electric Proxy 20 Group") and the group developed by Ms. Bulkley ("Bulkley Proxy Group"). These results 21 indicate that the appropriate equity cost rate for companies in the Electric and Bulkley

1	Proxy Groups is in the 8.85% to 9.80% range. Given that: (1) I rely primarily on the DCF
2	model and the results for the Electric Proxy Group; (2) I have recommended a capital
3	structure with a higher common equity ratio and lower financial risk than the two proxy
4	groups; (3) the Companies' investment risk is slightly below the average of the proxy
5	groups; and (4) the recent market volatility and increase in interest rates, I am using a ROE
6	of 9.50% for the Companies. Given my proposed capital structure and capital cost rates
7	for the Companies, I am recommending an overall fair rate of return or cost of capital of
8	7.07% for EKC. These are summarized in Table 2 and Exhibit JRW-1.

9

10

CURB'	s Rate of Return Reco	ommendation	S	
	Capitalization	Cost	Weighted	
	Ratios	Rate	Cost Rate	
Long-Term Debt	50.00%	4.650%	2.32%	
<b>Common Equity</b>	<u>50.00%</u>	9.500%	4.75%	
Total Capital	100.00%		7.07%	

Table 2

11 12

13

#### C. Primary Rate of Return Issues in this Case

# 14 Q. PLEASE DESCRIBE THE PRIMARY RATE OF RETURN ISSUES IN THIS 15 CASE.

# A. The primary rate of return issues in this case are the appropriate capital structure and ROEfor the Companies.

181.The Companies' Assessment of Capital Market Conditions:Ms. Bulkley's19analyses, ROE results, and recommendations are based on assumptions of higher20interest rates and capital costs. However, despite the increase in inflation and21interest rates over the past two years and the financial market volatility associated

1		with the new administration's focus on tariffs, several factors suggest the equity
2		cost rate for utilities has not risen significantly. To support this contention, I show
3		that: (1) despite the higher inflation of the past two years, long-term inflation
4		expectations are in the 2.25%-2.50% range; (2) the yield curve is once again
5		positively sloped (which is normal) but is relatively flat suggesting that investors
6		require similar returns for short-term and longer-term Treasuries; (3) I show that
7		authorized ROEs have not increased or decreased as much as interest rates in recent
8		years, and so the increases in interest rates in the last two years does not mean that
9		authorized ROEs need to increase as much; and (4) during 2025, as President
10		Trump has introduced new economic policies including tariffs, there has been a
11		significant increase in inflationary fears and financial market volatility, and the
12		stock market has declined. However, utility stocks have proved to be a safe haven
13		for investors, for while the S&P 500 has recovered from its Trump trade down and
14		are about even for the year, utility stocks are up to 5%.
15	2.	The Companies' Investment Risk is Slightly Below the Average of the Two
16		<b>Proxy Groups</b> : The S&P and Moody's credit ratings of BBB+ and Baa1 for EKC
17		are slightly better than the averages of the proxy groups. These issuer credit ratings
18		indicate that the Companies' investment risk is slightly below the average of the
19		two proxy groups, who have average S&P and Moody's issuer credit ratings of

BBB+ and Baa2.

20

# 213.The Companies' Proposed Capital Structure Includes an Inflated Common22Equity Ratio and Lower Financial Risk than the Two Proxy Groups: I have

1 evaluated the Companies' proposed capital structure as well as the capital structures of EKC and EVRG. The Companies' proposed capital structure includes a higher 2 3 common equity ratio and less financial risk than the averages of the two proxy 4 groups. EVRG has \$2.7 billion in debt at the holding company level. EKC owns 5 about 50% of the assets of EVRG. If 50% of EVRG's debt is allocated to the 6 capitalization of EKC, its common equity ratio would be 45.93%. However, in the 7 interest of conservatism, I am recommending a capital structure with a common 8 equity ratio of 50.0%. I am using a blended cost of debt of 4.65%.

- 9 4. DCF Equity Cost Rate: Ms. Bulkley and I both employ the traditional constant10 growth DCF model. However, Ms. Bulkley overstates reported DCF results by
  11 exclusively using the overly optimistic and upwardly biased earnings per share
  12 ("EPS") growth rate forecasts of Wall Street analysts and *Value Line*. By contrast,
  13 to develop the DCF growth rate for my analysis, I reviewed 13 growth rate measures,
  14 including historical and projected growth rate measures, and have evaluated growth
  15 in dividends, book value, and EPS.
- 165.CAPM Equity Cost Rate: The CAPM approach requires an estimate of the risk-17free interest rate, the beta, and the market or equity risk premium. Two problems18arise from Ms. Bulkley's CAPM analysis: (1) employing the Empirical CAPM19("ECAPM") version of the CAPM results in inappropriate adjustments to the risk-20free rate and the market risk premium; and (2) more significantly, computing a21market risk premium of 7.54%. This 7.54% market risk premium is larger than:22(1) historic stock and bond return data indicate; and (2) published studies and

1 surveys of the market risk premium find. In addition, I demonstrate that Ms. 2 Bulkley bases the 7.54% market risk premium on unrealistic assumptions of future 3 economic and earnings growth and stock returns. To compute that market risk 4 premium, Ms. Bulkley applied the DCF model to the S&P 500 and employed an 5 average projected EPS growth rate of 10.51% to compute an expected market return 6 of 12.05% and market risk premium of 7.54%. First, I have conducted a study that 7 shows Ms. Bulkley's expected stock market return of 12.05% is almost double the 8 average annual stock return of 6.80% that investment firms tell investors to expect 9 over the next ten years. In addition, as I demonstrate later in my testimony, the EPS 10 growth-rate projection (10.51%) used for the S&P 500 and the resulting expected 11 market return (12.05%) and market risk premium (7.54%) both include unrealistic 12 assumptions regarding future economic and earnings growth and stock returns.

13 As I highlight in my testimony, it is common to use three approaches in 14 estimating a market risk premium – historic returns, surveys, and expected return 15 models. I use a market risk premium of 5.25%, which: (1) factors in all three 16 approaches to estimate a market premium; and (2) employs the results of many 17 studies of the market risk premium. As I noted, the 5.25% figure reflects the market 18 risk premiums: (1) that have been determined by leading finance scholars in recent 19 academic studies; (2) that are employed by leading investment banks and 20 management consulting firms; and (3) that are contained in surveys of companies, 21 financial forecasters, financial analysts, and corporate Chief Financial Officers 22 ("CFOs").

- 1 6. Alternative Risk Premium Model: Ms. Bulkley also estimates an equity cost rate 2 using an alternative risk premium model, calling it the Bond Yield Risk Premium 3 approach. Ms. Bulkley computes this risk premium using a regression of the 4 historical relationship between the yields on long-term Treasury bonds and 5 authorized ROEs for electric utility companies. Ms. Bulkley computes the 6 estimated ROE as the projected risk-free rate plus the risk premium. I discuss 7 several issues with this approach in more depth later, but the primary problems with 8 this approach are: (1) this particular risk premium approach is a gauge of *regulator* 9 behavior rather than *investor* behavior; (2) this methodology produces an inflated 10 measure of the risk premium because this approach uses historical authorized ROEs 11 and Treasury yields, and the resulting risk premium is applied to projected Treasury 12 yields; (3) the risk premium in this approach is inflated as a measure of investors' 13 required risk premium, since electric utility companies have been selling at market-14 to-book ratios in excess of 1.0; and (4) the ROE is dependent on the authorized 15 ROEs from state utility commissions, and the Werner and Jarvis study (2022), 16 which is discussed below, demonstrated that authorized ROEs over the past four 17 decades have not declined in line with capital costs and, therefore, past authorized 18 ROEs have overstated the actual cost of equity capital. 7. 19 Regulatory and Business Risks: Ms. Bulkley also considers several elements of
- 19 7. <u>Regulatory and Business Risks</u>: Ms. Bulkley also considers several elements of 20 the Companies' regulatory and business risks in arriving at her 10.50% ROE 21 recommendation. These include the Companies' capital expenditures, elements of 22 the Companies' regulatory risk in Kansas, nuclear generation ownership, and

1	wildfire risk. However, these factors are risk considerations utilized in the credit
2	rating process. As noted above, the Companies' S&P and Moody's issuer credit
3	ratings are a little above the average S&P and Moody's issuer credit ratings for the
4	proxy groups, which are BBB+ and Baa2. Therefore, despite these factors, the
5	Companies' investment risk is still a little below the average of the proxy groups.
6	
	III. CAPITAL MARKET CONDITIONS AND AUTHORIZED ROEs

7

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#### A. Capital Market Conditions

## 8 9 Q. PLEASE REVIEW TRENDS IN UTILITY CAPITAL COSTS INDICATORS.

A. Page 1 of Exhibit JRW-2 shows the yields on A-rated public utility bonds. These yields gradually declined in the past 15 years from 7.5% to the 3.0% range. These yields bottomed out in the 3.0% range in 2020 and 2021 due to the economic fallout from the Covid-19 pandemic. These yields have increased with interest rates in general over the 2022-25 time period and now are in the 6.00% range.

Page 2 of Exhibit JRW-2 shows the average dividend yield for electric utilities. Over the past decade these yields have primarily been in the 3.0%-3.5% range. These declined over the past 13 years, bottoming out at 3.1% in 2019. They increased to almost 4.0% in 2023 but declined to 3.6% in 2024.

# Page 3 of Exhibit JRW-2 shows the average earned ROE and market-to-book ratio for publicly held electric utilities. The average earned ROE has been in the 9.0% to 10.0% range over the past five years and the average market-to-book ratio has ranged between

1.5X and 2.0X. The persistence of the market-to-book ratios being above 1.0 clearly
 2 indicates that the earned ROEs for electric utilities (9.0%-10.0%) are above the equity
 3 return that investors require.

4 Q. PLEASE REVIEW RECENT DEVELOPMENTS IN THE ECONOMY AND
5 CAPITAL MARKETS.

6 A. Figure 1, below, shows 30-year Treasury yields over the past 15 years (2010–2025). In 7 2020, with the advent of the COVID-19 pandemic, 30-year Treasury yields declined to 8 record low levels, dropping about 100 basis points to settle in the 1.25% range. They began 9 their recovery in the summer of 2020 and increased significantly in 2022 and 2023 with 10 the massive government spending, improving economy, and higher inflation. These yields 11 peaked at about 5.00% in 2023, declined to the 4.0% range in 2024, and then increased 12 again to over 5.0% after the election. In 2025, these yields have declined and now are in 13 the 5.0% range.

14



16 17



#### DID UTILITIES TAKE ADVANTAGE OF THE LOWER BOND YIELDS TO 1 Q. 2 **RAISE CAPITAL?**

3 A. Yes. Figure 2 shows the annual amounts of debt and equity capital raised by public utility 4 companies over the past 13 years. Electric utility and gas distribution companies have 5 taken advantage of the low interest rate and capital cost environment of recent years and 6 raised record amounts of capital in the markets. In fact, in four out of the past five years, 7 public utilities have annually raised more than \$100 billion in combined debt and equity 8 capital.







Figure 2

2010-2023



#### 15 Q. PLEASE DISCUSS THE INCREASE IN INTEREST RATES OVER THE PAST 16 **THREE YEARS.**

17 Several factors led to higher interest rates during 2022–2025. Coming out of the pandemic, A.

- 18 real GDP growth increased 5.9% in 2021, 2.1% in 2022, 2.9% in 2023, and 2.8% in 2024,
- 19 compared to a decline of -3.4% in 2020. During 2022–2024, the improving economy and
- 20 business activity; supply chain shortages associated with COVID shutdowns; higher levels
- 21 of business and consumer spending; and record increases in housing prices put pressure on

inflation and interest rates. As shown in Figure 3, reported year-over-year inflation has
been as high as 9.20% in 2022, and has declined to the 2.5%-3.0% range since that time.

- 3 Year-over-year inflation was reported to be 2.3% as of April 2025.
- 4 5
- 6

789



Source: https://www.statista.com/statistics/273418/unadjusted-monthly-inflation-rate-in-the-us/

10 In response to the higher inflation, the Federal Reserve ("Fed") in 2022 increased 11 the discount rate by 25 basis points in March, 50 basis points in May, and 75 basis points 12 in June, July, September, and November, 50 basis points in December, and 25 basis points 13 in February, March, May, and July of 2023. The Fed held the discount rate firm at 5.50% 14 until September 18, 2024, when it cut the rate by 50 basis points. Subsequently, the Fed 15 cut the discount rate by 25 basis points at its November and December 2024 meetings. 16 Investor sentiment strongly favored additional rate cuts leading into the January 2025 Fed 17 meeting. However, the Fed did not bow to market pressure and put additional rate cuts on 18 hold as the economy has remained strong.

19Investors' inflation expectations can be seen by looking at the difference between20yields on ordinary Treasuries and the yields on inflation-protected Treasuries, known as

TIPS. Figure 4 shows the expected inflation rate over the last five, ten, and thirty years.
 One can see the big increase in 2022, although it has fallen since mid-2022 and shows an
 expected inflation rate in the range of 2.25%–2.50%.



#### 8 Q. PLEASE DISCUSS INTEREST RATES COMING INTO 2025.

4

5

6 7

A. As discussed above, the recovery of the economy pushed up inflation and interest rates during 2022–2024, but long-term inflationary expectations remained in the 2.25%–2.50% range. In 2024, the yield curve flattened as the Federal Reserve, which increased the discount rate eleven times in 2022–2023, began the process of normalizing interest rates by cutting the discount rate three times in 2024. After the election and coming into 2025, investors were looking for the Federal Reserve to cut rates again.

#### 15 Q. PLEASE DISCUSS THE MARKETS AND THE INCREASE IN VOLATILITY

#### 16 SINCE PRESIDENT TRUMP TOOK OFFICE ON JANUARY 20TH.

A. Two of President Trump's priorities include significant cuts in government spending and
the imposition of tariffs to offset trade deficits. These two initiatives have produced
increases in inflationary fears and financial market volatility (with Wall Street's "Fear
Gauge," VIX peaking at over 50.0) and about a 10% decline in the stock market. However,

1 several factors suggest these actions have run their course at this time: (1) the government spending cuts and the President's tariff negotiations appear to be moving along with less 2 3 market impact. The stock market has recovered from its initial losses; (2) the President and Treasury Secretary have stated that they expect that the discount rate will be cut in 4 5 2025 and interest rates will decline; (3) the Administration's actions have increased the 6 probability of a recession in 2025, which could result in lower interest rates; and (4) utility 7 stocks have proven to be safe havens for investors during this period of economic 8 uncertainty. Figure 5 shows the year-to-date performance of the S&P Utilities Index and 9 the S&P 500. Year-to-date, the S&P Utilities Index has produced a 7% return, while the S&P 500 has recovered from its YTD losses and is about even for the year. Hence, investors 10 11 do not see utilities being significantly impacted by the Administration's imposition of 12 government spending cuts and tariffs.





14 15





Data Source: S&P Global Market Intelligence, S&P Cap IQ, 2025.

#### **B.** Authorized ROEs

# 2 Q. PLEASE DISCUSS THE TREND IN AUTHORIZED ROES FOR GAS AND 3 ELECTRIC COMPANIES.

4 Α Figure 6 shows the authorized ROEs for electric utility and gas distribution companies 5 from 2000-2024. The authorized ROEs have trended downward with interest rates and 6 capital costs in the past 15 years. The average annual authorized ROEs for electric and gas 7 distribution companies have been below 10.0% for over a decade (2011). In 2020 and 8 2021, authorized ROEs for utilities hit an all-time low. Table 3 provides the average annual authorized ROEs for electric utility and gas distribution from 2010 to 2025.<sup>3</sup> In 2024 and 9 10 2025, the average annual authorized ROEs for electric and gas companies have been in the 11 9.70% range.

12

1

13 14





#### 15 16 17

Data Source: S&P Global Market Intelligence, RRA Regulatory Focus, 2025.

<sup>&</sup>lt;sup>3</sup> The data and numbers discussed in this section come from S&P Global Market Intelligence, RRA *Regulatory Focus*, 2025.

1					Tal	ble 3					
2		Average Annual Authorized ROEs for Electric Utilities									
3				and Gas	5 Distrib	ution Co	mpanies				
4					2010	-2025					
				Electric	Gas		Electric	Gas	_		
			2010	10.37	10.15	2018	9.65	9.59			
			2011	10.29	9.92	2019	9.66	9.72	_		
			2012	10.17	9.94	2020	9.44	9.47	_		
			2013	10.03	9.68	2021	9.38	9.56	_		
			2014	9.91	9.78	2022	9.54	9.53	_		
			2015	9.70	9.0	2025	9.00	9.04	_		
			2010	9.77	9.54	2024	9.70	9.72	_		
5				9./4	9.72	Q1-2025	9.72	9.75			
6		Data Source	e: S&P Glo	bal Marke	et Intellige	nce, RRA I	Regulatory	Focus, 20	025.		
7	0	DID THE HI	CHED I	NUTEDE		FEG IN 4	0000 00/	17 A NIT	D 2024		TILAT
/	Q.	DID THE HI	GHEKI	NIEKE	SI KA	IES IN 2	2022, 202	23, ANI	D 2024	WILAN	IHAI
8		AUTHORIZE	D ROE	S INCRI	EASED	IN LINE	WITH ]	INTER	EST R	ATES?	
9	A.	No. As noted	above, ai	uthorized	ROEs f	for utilitie	s reached	l record	low le	vels in 2	020 and
10		2021 due to th	e record	low inte	erest rate	es and cap	oital cost	s. How	vever, a	uthorize	d utility
11		ROEs never de	clined to	the same	e extent t	hat intere	st rates d	eclined i	in these	e two yea	rs. This
12		implies that wl	hile utilit	ties bene	fited from	m the low	v-cost en	vironme	ent, the	benefit	was not
10			1								
13		proportionally	passed o	n to rater	payers.						
14		In Pane	A of T	able 4 be	low, I h	ave avera	ged the 2	2018/202	19 (pre	-COVID	period)
15		figures and the	2020/20	21 (COV	/ID perio	od) figure	s for the	Treasur	y yield	s and au	thorized
16		ROEs, then co	mpared	the pre-C	COVID	and COV	ID perio	d ROEs	s and y	ields to	those in
17		2022, 2023, an	d 2024 (	post-CO	VID per	iod). A k	ey obser	vation fi	rom Pa	nel A of	Table 4
18		is that authorize	ed ROEs	for elect	ric utilit	y compan	ies, desp	ite hittir	ng reco	rd lows i	n 2020–
19		2021, did not o	lecline n	early as	much as	interest 1	ates. Th	e daily	30-yea	ır Treasu	ry yield
20		averaged 2.85%	6 in 2018	3 and 201	9, versu	s 1.81% ii	n 2020 ar	nd 2021,	, a decr	ease of 1	04 basis
21		points. Howev	ver, the a	authorize	d ROE	for electri	ic utility	compar	nies av	eraged 9	.63% in

2018 and 2019, respectively, and declined to an average of 9.41% in 2020 and 2021,

- respectively, a decline of only 22 basis points.
- 2 3

1

8

9

Table 4Average Annual 30-Year Treasury Yields and Authorized ROEsfor Electric Utility Companies

#### Panel A 2018–2021

							2020-21 Avg.
	2018	2019	2018-19	2020	2021	2020-21	Minus
	Average	Average	Average	Average	Average	Average	2018-19 Avg.
30-Year Treasury Yield	3.11%	2.58%	2.85%	1.56%	2.06%	1.81%	-1.04%
Average Electric ROE	9.60%	9.66%	9.63%	9.44%	9.38%	9.41%	-0.22%

Panel B

- 10 11
- 12

			2022	2–2024				
		2022 Avg.	A	2023 Avg.		2024 Avg.		2022-24 Avg.
	2022	Minus	2023	Minus	2024	Minus	2022-2024	Minus
	Average	2021 Avg.	Average	2022 Avg.	Average	2023 Avg.	Average	2020-21 Avg.
30-Year Treasury Yield	3.11%	1.05%	4.03%	0.92%	4.41%	0.38%	3.85%	2.04%
Average Electric ROE	9.54%	0.16%	9.60%	0.06%	9.72%	0.12%	9.62%	0.21%

13 14

Data Source: S&P Global Market Intelligence, RRA Regulatory Focus, 2025.

15 Panel B of Table 4 provides the authorized ROE and Treasury yield data for the post-COVID years 2022, 2023, and 2024. In 2022, the average daily 30-year Treasury 16 17 yield increased by 105 basis points to 3.11%, while authorized ROEs for electric utility companies increased to 9.54%, an increase of only 16 basis points. Likewise, the average 18 19 daily 30-year Treasury yield increased by 92 basis points to 4.03% in 2023, while 20 authorized ROEs for electric utility companies increased by 6 basis points to 9.60%. In 21 2024, the average daily 30-year Treasury yield increased by 38 basis points to 4.41%, while 22 authorized ROEs for electric utility companies increased 12 basis points to 9.72%.

In sum, the far-right column of Panel B of Table 4 shows the average authorized ROEs and 30-year Treasury yields for the COVID period (2020–2021) and the post-COVID years (2022–2024). The figures show that whereas the average 30-year Treasury

1		yield has increased by 2.04% or 204 basis points in the post-COVID years (2022-2024),
2		the authorized ROEs for electric utility companies only increased by 21 basis points.
3		Hence, the bottom line is that since authorized ROEs never declined as much as interest
4		rates during the COVID years, they are now not increasing at the same pace as interest
5		rates during the post-COVID years.
6	Q.	PLEASE DISCUSS THE TREND IN AUTHORIZED ROES FOR ELECTRIC AND
7		GAS COMPANIES IN KANSAS?
0		
8	A.	Table 5 shows the electric utilities and gas distribution companies in Kansas from 2010–
8 9	A.	Table 5 shows the electric utilities and gas distribution companies in Kansas from 2010–2025. These authorized ROEs ranged between 9.10%–9.30% for the five years prior to
8 9 10	A.	Table 5 shows the electric utilities and gas distribution companies in Kansas from 2010–2025. These authorized ROEs ranged between 9.10%–9.30% for the five years prior tothe pandemic. Since that time, rate cases in Kansas were settlements with no specified
8 9 10 11	A.	Table 5 shows the electric utilities and gas distribution companies in Kansas from 2010–2025. These authorized ROEs ranged between 9.10%–9.30% for the five years prior tothe pandemic. Since that time, rate cases in Kansas were settlements with no specifiedROE or capital structure. In the Company's last rate case in Docket No.23-EKCE-775-

- 13 no specified return on equity or capital structure or common equity ratio.
- 14
- 15
- 16

Table 5
Kansas Electric and Gas Rate Cases
2010-2025

Company	TKR	Docket	Service	Туре	Date	Decision	Rate Increase	ROE	CE Ratio
Evergy Kansas Central Inc.	EVRG	-09-WSEE-925-RTS (WI	Electric	Vertically Integrated	1/27/2010	Settled	8.6	10.40	50.13
Evergy Kansas South	EVRG	9-WSEE-925-RTS (KGa	Electric	Vertically Integrated	1/27/2010	Settled	8.6	10.40	50.13
Evergy Metro Inc	EVRG	D-10-KCPE-415-RTS	Electric	Vertically Integrated	11/22/2010	Fully Litigated	21.8	10.00	49.66
Evergy Metro Inc	EVRG	D-12-KCPE-764-RTS	Electric	Vertically Integrated	12/13/2012	Fully Litigated	33.2	9.50	51.82
Evergy Kansas Central Inc.	EVRG	D-13-WSEE-629-RTS	Electric	Vertically Integrated	11/21/2013	Settled	30.7	10.00	52.63
Atmos Energy Corp.	ATO	D-14-ATMG-320-RTS	Gas	Distribution	9/4/2014	Settled	4.3	9.10	53.00
Evergy Metro Inc	EVRG	D-15-KCPE-116-RTS	Electric	Vertically Integrated	9/10/2015	Fully Litigated	40.1	9.30	50.48
Evergy Kansas Central Inc.	EVRG	D-18-WSEE-328-RTS	Electric	Vertically Integrated	9/27/2018	Settled	(50.3)	9.30	51.24
Evergy Metro Inc	EVRG	D-18-KCPE-480-RTS	Electric	Vertically Integrated	12/13/2018	Settled	(3.9)	9.30	49.09
Atmos Energy Corp.	ATO	D-19-ATMG-525-RTS	Gas	Distribution	2/24/2020	Fully Litigated	3.1	9.10	56.32
Black Hills Kansas Gas	BKH	D-21-BHCG-418-RTS	atural Ga	Distribution	12/30/2021	Settled	6.6	NA	NA
Empire District Electric	AQN	D-21-EPDE-444-RTS	Electric	Vertically Integrated	5/26/2022	Settled	(0.6)	NA	NA
Atmos Energy Corp.	ATO	D-23-ATMG-359-RTS	atural Ga	Distribution	5/9/2023	Settled	5.7	NA	NA
Evergy Kansas Central	EVRG	-EKCE-775-RTS (EKC/	Electric	Vertically Integrated	11/21/2023	Settled	148.8	NA	NA
Evergy Metro Inc	EVRG	-23-EKCE-775-RTS (EM	Electric	Vertically Integrated	11/21/2023	Settled	(22.0)	NA	NA
Atmos Energy Corp.	ATO	D-23-ATMG-359-RTS	Natural G	Distribution	5/9/2023	Settled	5.7	NA	NA
Evergy Kansas Central Inc.	EVRG	D-23-EKCE-775-RTS (H	Electric	Vertically Integrated	11/21/2023	Settled	148.8	NA	NA
Evergy Metro Inc	EVRG	D-23-EKCE-775-RTS (I	Electric	Vertically Integrated	11/21/2023	Settled	(22.0)	NA	NA
Kansas Gas Service Co.	OGS	D-24-KGSG-610-RTS	Natural G	Distribution	10/3/2024	Settled	70.0	NA	NA

Data Source: S&P Global Market Intelligence, RRA Regulatory Focus, 2025.

1 2 **Q**.

## AND BLUEFIELD STANDARDS?

3 A. Yes, I do. As previously noted, according to the *Hope* and *Bluefield* decisions, returns on 4 capital should be: (1) comparable to returns investors expect to earn on other investments 5 of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and 6 (3) adequate to maintain and support the company's credit and to attract capital. As shown 7 on page 1 of Exhibit JRW-3, electric utilities companies have been earning ROEs in the 8 range of 8.0% to 10.0% in recent years. With such ROEs, electric utilities companies such 9 as those in the proxy group have strong investment grade credit ratings, their stocks have 10 been selling well over book value, and they have been raising large amounts of capital. 11 While my recommendation is slightly below the average authorized ROEs for electric 12 utilities companies, it reflects current market conditions. Therefore, I believe that my ROE 13 recommendation meets the criteria established in the Hope and Bluefield decisions.

DO YOU BELIEVE THAT YOUR ROE RECOMMENDATION MEETS HOPE

# Q. WITH RESPECT TO THIS DISCUSSION, PLEASE DISCUSS THE WALL STREET JOURNAL ARTICLE ON UTILITIES' AUTHORIZED ROES.

A. The *Wall Street Journal* article, entitled "Utilities Have a High-Wire Act Ahead," discussed the issues utilities face today to meet the needs of their primary stakeholders customers and investors.<sup>4</sup> The article also highlights current utility rate issues in the context of a recent study on rate of return regulation. Werner and Jarvis (2022) evaluated the authorized ROEs in 3,500 electric and gas rate case decisions in the U.S. from 1980– 2021. They compared the allowed rate of return on equity to a number of capital cost

*L* I

<sup>&</sup>lt;sup>4</sup> Jinjoo Lee, "Utilities Have a High-Wire Act Ahead," *Wall Street Journal*, October 9, 2022, p. C1,

1	benchr	marks (government and corporate bonds, CAPM equity cost rate estimates, and U.K.					
2	author	authorized ROEs) and focused on three questions: (1) To what extent are utilities being					
3	allowe	d to earn excess returns on equity by their regulators?; (2) How has this return on					
4	equity	affected utilities' capital investment decisions?; and (3) What impact has this had					
5	on the	costs paid by consumers? <sup>5</sup>					
6		The authors reported the following empirical results:					
7 8 9	(1)	The real (inflation-adjusted) return regulators allow equity investors to earn has remained pretty steady over the last 40 years, while the many different cost of capital measures have been declining;					
10 11 12 13	(2)	The gap between the authorized ROEs and the benchmarks suggest that regulators have been approving ROEs that are from 0.50% to 5.50% above the cost of equity estimates;					
14 15 16 17	(3)	One potential explanation is that utilities have become riskier. However, the authors find that utility credit ratings, on average, have not changed much over the past 40 years;					
18 19 20 21 22 23	(4)	An extra 1.0% of allowed return on equity causes a utility's capital rate base to expand by an extra 5% on average. This supports the Averch-Johnson effect that utilities have the incentive to overinvest in capital projects if they are earning an outsized return on those investments;					
23 24 25 26 27 28	(5)	Both the return on equity requested by utilities and the return granted by regulators respond more quickly to rises in market measures of capital cost than to declines. The time adjustment (i.e., the time lag) for decreases is twice as long as for increases.					
28 29 30 21	(6)	Authorized ROEs tend to be approved at round numbers (1.0, 0.5, 0.25), with 10.0% being the most common authorized ROE;					
32 33 34	(7)	Overall, based on the gap, consumers may be paying \$2-\$20 billion per year more than if authorized ROEs had fallen in line with other capital market indicators; and					
34 35 36	(8)	The authors also indicated that their results are similar to those found in a previous study by Rode and Fischback (2019). <sup><math>6</math></sup>					

<sup>&</sup>lt;sup>5</sup> Karl Dunkle Werner and Stephen Jarvis, "Rate of Return Regulation Revisited," Working Paper, Energy Institute, University of California at Berkeley, 2022.

<sup>&</sup>lt;sup>6</sup> David C. Rode and Paul S. Fischbeck, "Regulated Equity Returns: A Puzzle." *Energy Policy*, October, 2019.

1		In summary, these results indicate that, over the past four decades, authorized ROEs
2		have not declined in line with capital costs and therefore past authorized ROEs have
3		overstated the actual cost of equity capital. Hence, the Commission should not be
4		concerned that my recommended ROE is below other authorized ROEs.
5		
		IV. <u>PROXY GROUP SELECTION</u>
6		
7	Q.	PLEASE DESCRIBE YOUR APPROACH TO DEVELOPING A FAIR RATE OF
8		RETURN RECOMMENDATION FOR THE COMPANIES.
9	A.	To develop a fair rate of return recommendation for the Companies, I evaluated the return
10		requirements of investors on the common stock of a proxy group of publicly-held electric
11		utility companies ("Electric Proxy Group"). I also employed the group developed by Ms.
12		Bulkley ("Bulkley Proxy Group").
13	Q.	PLEASE DESCRIBE YOUR PROXY GROUP OF ELECTRIC COMPANIES.
14	A.	The selection criteria for my Electric Proxy Group include the following:
15		(1) Receives at least 50% of revenues from regulated electric operations as
16		reported in its SEC Form 10-K Report;
17		(2) <i>Value Line Investment Survey</i> lists it as a U.Sbased electric utility;
18		(3) Holds an investment-grade corporate credit and bond rating;
19		(4) Has paid a cash dividend for the past six months, with no cuts or omissions;
20		(5) Is not involved in an acquisition of another utility and not the target of an
21		acquisition; and

- 1 2
- (6) Its analysts' long-term EPS growth rate forecasts are available from Yahoo,S&P Cap IQ, and/or Zacks.

The Electric Proxy Group includes 27 companies. Page one of Exhibit JRW-3 provides summary financial statistics for the proxy group, showing mean operating revenues and net plant among members of the Electric Proxy Group of \$11.47 billion and \$45.93 billion respectively. On average, the Electric Proxy Group receives 80% of its revenues from regulated electric operations, has a BBB+ bond rating from S&P's and a Baa2 rating from Moody's, has a current average common equity ratio of 38.8%, and an average earned return on common equity of 9.26%.

#### 10 Q. PLEASE DESCRIBE THE BULKLEY PROXY GROUP.

A. Ms. Bulkley's group is smaller (17 utilities). Panel B of page one of Exhibit JRW-3
provides summary financial statistics for the Bulkley Proxy Group, showing median
operating revenues and net plant of \$10.66 billion and \$45.01 billion respectively. On
average, the Bulkley Proxy Group receives 81% of its revenues from regulated electric
operations, has a BBB+ bond rating from S&P's and a Baa2 rating from Moody's, has an
average common equity ratio of 39.9%, and an average earned return on common equity
of 9.49%.

## 18 Q. HOW DOES THE INVESTMENT RISK OF THE COMPANIES COMPARE TO 19 THAT OF YOUR PROXY GROUPS?

A. I believe bond ratings provide a good assessment of a company's investment risk. The
Companies' S&P and Moody's credit ratings are BBB+ and Baa1 and the average S&P

1		and Moody's issuer credit ratings for the two proxy groups are BBB+ and Baa2. <sup>7</sup> This
2		indicates that the investment risk of the Companies is a little below the average of the two
3		proxy groups.
4	Q.	PLEASE DISCUSS THE RISK ANALYSIS YOU PERFORMED ON PAGE TWO
5		OF EXHIBIT JRW-3.
6	A.	On page two of Exhibit JRW-3, I use five different risk measures to assess the riskiness of
7		the two proxy groups: Beta (0.86 vs. 0.85), Financial Strength (A vs. A), Safety (1.9 vs.
8		1.8), Earnings Predictability (85 vs. 87), and Stock Price Stability (90 vs. 94). Overall,
9		these measures suggest that the investment risk of the two groups (1) is very low and (2) is
10		similar to each other.
11		
		V. <u>CAPITAL STRUCTURE RATIOS AND DEBT COST RATES</u>
12		
14	Q.	WHAT ARE THE COMPANIES' RECOMMENDED CAPITAL STRUCTURE
15		AND SENIOR CAPITAL COST RATES FOR RATEMAKING PURPOSES?
16	A.	Panel A of Exhibit JRW-4 provides the Companies' proposed capital structure and debt
17		cost rates. Mr. Ley has proposed capital structures consisting of 48.03% long-term debt

and 51.97% equity for EKC. Mr. Ley has proposed a long-term debt cost rate of 4.641%.

18

<sup>&</sup>lt;sup>7</sup> Evergy, Inc. and its subsidiaries, including the Companies, were downgraded by S&P from A- to BBB+ after the settlement in the Companies' last KS rate case, Docket No. 23-EKCS-775-RTS. No ROE or capital structure were specified in the settlement, but the Companies were allowed to use: (1) a ROE of 9.40% on its Transmission Delivery Charge (TDC) investments; and (2) a rate of return of 6.8923% for regulatory accounting purposes. Nonetheless, S&P downgraded Evergy and its subsidiaries, citing weakened financials due to higher expenses and lower cost recovery. See "Standard & Poor's, Evergy Inc. And Subsidiaries Downgraded by One Notch on Weakening Financials; Outlook Revised to Stable," November 19, 2023.

# 1Q.PLEASE DISCUSS THE CAPITAL STRUCTURES OF THE COMPANIES IN THE2PROXY GROUPS.

A. Page 1 of Exhibit JRW-3 provides the average common equity ratios for the companies in the two proxy groups. As of December 31, 2024, the average common equity ratios for the Electric Proxy Group and Bulkley Proxy Group were 38.8% and 39.9%, respectively. As such, the average common equity ratios for the proxy group companies are much lower and represent higher financial risk than the Companies' common equity ratio. That means the Companies have proposed capital structures with more common equity and less financial risk than the proxy groups.

#### 10 Q. PLEASE REVIEW THE CAPITAL STRUCTURES OF EKC AND EVRG.

On pages 2 and 3 of Exhibit JRW-4, I have computed the average quarterly capitalization 11 A. 12 ratios of EKC and EVRG over the 2022-24 time period. The averages ratios are presented in 13 Panel B of Exhibit JRW-4. EKC and EVRG's average common equity ratios over this period 14 are 48.74% and 42.92% including short-term debt and 53.04% and 48.14% excluding short-15 term debt. Two things stand out from these figures. First, EKC consistently uses short-term 16 debt to finance its operations. Second, EVRG's corporate capital structure includes more debt 17 and less equity than EKC. In fact, page 5 of Exhibit JRW-4 lists EVRG's various debt issues. 18 Notably, EVRG's corporate capitalization includes not only the debt of its utility subsidiaries 19 but also \$2.7 billion in debt issued by EVRG.

#### IS IT APPROPRIATE TO USE THE COMMON EQUITY RATIOS OF THE 1 Q. PARENT HOLDING COMPANIES RATHER THAN THE SUBSIDIARY 2 3 **OPERATING UTILITIES FOR COMPARISON PURPOSES WITH THE** 4 **COMPANIES' PROPOSED CAPITALIZATION?**

- 5 A. Yes. It is appropriate to use the common equity ratios of the utility holding companies 6 because the *holding companies* are publicly traded, and their stocks are used in the cost of 7 equity capital studies. The equities of the *operating utilities* are not publicly traded, and 8 hence their stocks cannot be used to compute the cost of equity capital for the Companies.
- 9 Q. IS IT APPROPRIATE TO INCLUDE SHORT-TERM DEBT IN THE CAPITALIZATION IN COMPARING THE COMMON EQUITY RATIOS OF 10 11 THE HOLDING COMPANIES WITH THE COMPANIES' **PROPOSED** 12 **CAPITALIZATION?**
- 13 Yes. Debt has a higher claim on the assets and earnings of the companies than common A. 14 equity and requires timely payment of interest and repayment of principal. Thus, in 15 comparing the common equity ratios of the holding companies with the Companies' 16 recommendation, it is appropriate to include short-term debt when computing the holding 17 companies' common equity ratios. Additionally, the financial risk of a company is based 18 on total debt, which includes both short-term and long-term debt.

## 19

#### **Q**. PLEASE DISCUSS THE SIGNIFICANCE OF THE AMOUNT OF EQUITY THAT

- 20 IS INCLUDED IN A UTILITY'S CAPITAL STRUCTURE.
- 21 A utility's decision as to the amount of equity capital it will incorporate into its capital A. 22 structure involves fundamental trade-offs relating to the amount of financial risk the firm

carries, the return on equity that investors will require, and the overall revenue requirement
 its customers are required to bear through the rates they pay.

#### **3 Q. PLEASE DISCUSS A UTILITY'S DECISION TO USE DEBT VERSUS EQUITY**

4

#### TO MEET ITS CAPITAL NEEDS.

5 A. Utilities satisfy their capital needs through a mix of equity and debt. Because equity capital 6 is more expensive than debt, the issuance of debt enables a utility to raise more capital for 7 a given commitment of dollars than it could raise with just equity. Debt is, therefore, a 8 means of "leveraging" capital dollars. However, as the amount of debt in the capital 9 structure increases, its financial risk increases and the risk of the utility, as perceived by 10 equity investors, also increases. Significantly for this case, the converse is also true. As 11 the amount of debt in the capital structure decreases, the financial risk decreases. The 12 required return on equity capital is a function of the amount of overall risk that investors 13 perceive, including financial risk in the form of debt.

# 14 Q. WHY IS THIS RELATIONSHIP IMPORTANT TO THE UTILITY'S 15 CUSTOMERS?

A. Just as there is a direct correlation between the utility's authorized ROE and the utility's revenue requirement (the higher the return, the greater the revenue requirement), there is a direct correlation between the amount of equity in the capital structure and the revenue requirement the customers are called on to bear. Again, equity capital is more expensive than debt. Not only does equity command a higher cost rate, but it also adds more to the income tax burden that ratepayers are required to pay through rates. As the equity ratio increases, the utility's revenue requirement increases, and the rates paid by customers increase. If the proportion of equity is too high, rates will be higher than they need to be.
 For this reason, the utility's management should pursue a capital acquisition strategy that
 results in the proper balance in the capital structure to minimize the overall cost of capital.

4

#### Q. HOW HAVE UTILITIES TYPICALLY STRUCK THIS BALANCE?

A. Due to regulation and the essential nature of its output, a regulated utility is exposed to less
business risk than other companies that are not regulated. This means that a regulated
electric utility company can reasonably carry relatively more debt in its capital structure
than can most unregulated companies. Thus, a utility should take appropriate advantage
of its lower business risk to employ cheaper debt capital at a level that will benefit its
customers through lower revenue requirements. Typically, one may see equity ratios for
electric utilities range from 40% to 50%.

# Q. PLEASE ALSO DISCUSS THE ISSUE OF PUBLIC UTILITY HOLDING COMPANIES SUCH AS EVRG USING DEBT TO FINANCE THE EQUITY IN SUBSIDIARIES.

## A. As discussed above, the average common equity ratios for EKC and EVRG were 48.7% and 42.9% over the 2022–2024 period. Moody's published an article on the use of lowcost debt financing by public utility holding companies to increase their ROEs. The summary observations included the following about how these holding companies use "leverage" and how an increase in leverage at the parent holding company can "hurt the credit profiles of its regulated subsidiaries":

21U.S. utilities use leverage at the holding-company level to invest in22other businesses, make acquisitions and earn higher returns on

1 2	equity. In some cases, an increase in leverage at the parent can hurt the credit profiles of its regulated subsidiaries. <sup>8</sup>
3	This financial strategy is traditionally known as "double leverage." Moody's noted
4	that, "double leverage' results in a consolidated debt-to-capitalization ratio that is higher
5	at the parent than at the subsidiary because of the additional debt at the parent," and defined
6	double leverage as follows:
7 8 9	Double leverage is a financial strategy whereby the parent raises debt but downstreams the proceeds to its operating subsidiary, likely in the form of an equity investment. Therefore, the subsidiary's
9 10	operations are financed by debt raised at the subsidiary level and by
10	debt financed at the holding-company level. In this way, the
12	subsidiary's equity is leveraged twice once with the subsidiary debt
12	and once with the holding-company debt. In a simple operating-
17	company/holding.company structure, this practice results in a
15	consolidated debt_to_capitalization ratio that is higher at the parent
15 16	than at the subsidiary because of the additional debt at the parent. <sup>9</sup>
17	Moody's goes on to discuss the potential risk "down the road" to utilities of this
18	financing corporate strategy if regulators were to ascribe the debt at the parent level to the
19	subsidiaries or adjust the authorized return on capital:
20	"Double leverage" drives returns for some utilities but could
21	pose risks down the road. The use of double leverage, a long-
22	standing practice whereby a holding company takes on debt and
23	downstreams the proceeds to an operating subsidiary as equity,
24	could pose risks down the road if regulators were to ascribe the debt
25	at the parent level to the subsidiaries or adjust the authorized return
26	on capital. <sup>10</sup>

<sup>&</sup>lt;sup>8</sup> *High Leverage at the Parent Often Hurts the Whole Family*, Moody's Investors' Service 1 (May 11, 2015).

<sup>&</sup>lt;sup>9</sup> *Id.* at 5.

<sup>&</sup>lt;sup>10</sup> *Id.* at 1 (emphasis added).

# Q. GIVEN THAT THE COMPANIES HAVE PROPOSED AN EQUITY RATIO THAT IS HIGHER THAN THAT OF THE PROXY GROUP AND ITS PARENT, EVRG, WHAT SHOULD THE COMMISSION DO IN THIS RATEMAKING PROCEEDING?

5 A. When a regulated utility's actual capital structure contains a high equity ratio, the options 6 are: (1) to impute a more reasonable capital structure that is comparable to that of the proxy 7 group and to reflect the imputed capital structure in revenue requirements; or (2) to 8 recognize the downward impact that an unusually high equity ratio will have on the 9 financial risk of a utility and authorize a lower common equity cost rate than that for the 10 proxy group.

# Q. PLEASE COMMENT ON MS. BULKLEY'S CAPITAL STRUCTURE STUDY FOUND IN EXHIBIT AEB-11.

13 Ms. Bulkley claims to support the Companies' proposed capital structure in a study she A. 14 performed in Exhibit AEB-11. She reports that the operating companies owned by her 17 15 proxy utilities have a common equity ratio of 51.85%, which is similar to the capitalizations 16 proposed by the Companies. The error is that the operating companies are not the proxy 17 utility companies. The proxy utilities are the holding companies that own the operating 18 companies. As shown in Exhibit JRW-3, the average common equity ratio for the parent 19 holding companies as of December 31, 2024, was 38.8%. Hence, her study does not support 20 the Companies' proposed capital structures.

#### 1 Q. PLEASE DISCUSS PAGE 4 OF EXHIBIT JRW-4.

- A. Page 4 of Exhibit JRW-4 provides my analysis of EVRG's \$2.7B in debt. In panel A, I
  compute the weighted average cost of this debt, which is 4.68%. In panel B, I computed a
  blended debt cost rate for EKC of 4.650%, which uses EKC's debt amount and cost rate
  and combined with 50% of EVRG's debt at the 4.68% cost rate.
- Page 4 of Exhibit JRW-4 provides my modified EKC capital structure. In this
  analysis, I have included 50% of EVRG's \$2.7 billion with EKC's debt and common
  equity. The adjusted capitalization ratios are 54.07% long-term debt and 45.93% common
  equity.

# Q. GIVEN THIS DISCUSSION, WHAT CAPITALIZATION RATIOS AND CAPITAL COST RATES ARE YOU RECOMMENDING FOR THE COMPANIES?

A. My analysis indicates that, by including a portion of EVRG's holding company debt in
EHC's capital structure, a capital structure with a common equity ratio of 45.93% is
appropriate for EVRG. However, I believe that such a capital structure could cause credit
rating issues for EKC. Hence, as a compromise, I will use a capital structure with a
common equity ratio of 50.0% and I will use my blended debt cost rate of 4.650%.

#### VI. <u>THE COST OF COMMON EQUITY CAPITAL</u>

#### A. Overview

#### 17

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### Q. WHY MUST AN OVERALL COST OF CAPITAL OR FAIR RATE OF RETURN BE ESTABLISHED FOR A PUBLIC UTILITY?

A. In a competitive industry, the return on a firm's common equity capital is determined
through the competitive market for its goods and services. Due to the capital requirements
needed to provide utility services and the economic benefit to society from avoiding
duplication of these services and the construction of utility infrastructure, most public
utilities are monopolies. Because of the lack of competition and the essential nature of
their services, it is not appropriate to permit monopoly utilities to set their own prices.
Thus, regulation seeks to establish prices that are fair to consumers and, at the same time,
sufficient to meet the operating and capital costs of the utility, *i.e.*, provide an adequate
return on capital to attract investors.

# 8 Q. PLEASE PROVIDE AN OVERVIEW OF THE COST OF CAPITAL IN THE 9 CONTEXT OF THE THEORY OF THE FIRM.

A. The total cost of operating a business includes the cost of capital. The cost of commonequity capital is the expected return on a firm's common stock that the marginal investor
would deem sufficient to compensate for risk and the time value of money. In equilibrium,
the expected and required rates of return on a company's common stock are equal.

14 Normative economic models of a company or firm, developed under very 15 restrictive assumptions, provide insight into the relationship between a firm's performance 16 or profitability, capital costs, and the value of the firm. Under the economist's ideal model 17 of perfect competition — where entry and exit are costless, products are undifferentiated, 18 and there are increasing marginal costs of production — firms produce up to the point 19 where price equals marginal cost. Over time, a long-run equilibrium is established where 20 the price of the firm equals average cost, including the firm's capital costs. In equilibrium, 21 total revenues equal total costs, and because capital costs represent investors' required 1

2

return on the firm's capital, actual returns equal required returns, and the market value must equal the book value of the firm's securities.

- 3 In a competitive market, firms can achieve competitive advantage due to product-4 market imperfections. Most notably, companies can gain competitive advantage through 5 product differentiation (adding real or perceived value to products) and by achieving 6 economies of scale (decreasing marginal costs of production). Competitive advantage 7 allows firms to price products above average cost and thereby earn accounting profits 8 greater than those required to cover capital costs. When these profits are in excess of those 9 required by investors, or when a firm earns an ROE in excess of its cost of equity, investors 10 respond by valuing the firm's equity in excess of its book value.
- 11James M. McTaggart, founder of the international management consulting firm12Marakon Associates, described this essential relationship between the ROE, the cost of
- 13 equity, and the market-to-book ratio in the following manner:
- 14 Fundamentally, the value of a company is determined by the cash flow it generates over time for its owners, and the minimum acceptable rate 15 of return required by capital investors. This "cost of equity capital" is 16 17 used to discount the expected equity cash flow, converting it to a present 18 value. The cash flow is, in turn, produced by the interaction of a 19 company's return on equity and the annual rate of equity growth. High 20 return on equity (ROE) companies in low-growth markets, such as 21 Kellogg, are prodigious generators of cash flow, while low ROE 22 companies in high-growth markets, such as Texas Instruments, barely 23 generate enough cash flow to finance growth. 24 A company's ROE over time, relative to its cost of equity, also 25 determines whether it is worth more or less than its book value. If its 26 ROE is consistently greater than the cost of equity capital (the investor's 27 minimum acceptable return), the business is economically profitable 28 and its market value will exceed book value. If, however, the business 29 earns an ROE consistently less than its cost of equity, it is economically 30 unprofitable and its market value will be less than book value.<sup>11</sup>

<sup>&</sup>lt;sup>11</sup> James M. McTaggart, "The Ultimate Poison Pill: Closing the Value Gap," *Commentary* (Spring 1986), p. 3.

As such, the relationship between a firm's ROE, cost of equity, and market-to-b	ook
ratio is relatively straightforward. A firm that earns an ROE above its cost of equity	will
see its common stock sell at a price above its book value. Conversely, a firm that earns	s an
ROE below its cost of equity will see its common stock sell at a price below its book va	lue.
Q. PLEASE PROVIDE ADDITIONAL INSIGHTS INTO THE RELATIONS	HP
<b>BETWEEN ROE AND MARKET-TO-BOOK RATIOS.</b>	
A. This relationship is discussed in a classic Harvard Business School case study enti	tled
"Note on Value Drivers." On page 2 of that case study, the author describes the relations	ship
very succinctly:	
For a given industry, more profitable firms – those able to generate higher retu per dollar of equity – should have higher market-to-book ratios. Conversely, fi which are unable to generate returns in excess of their cost of equity [(K)] sho sell for less than book value. <sup>12</sup> <i>Profitability Value</i>	ırns rms ould
$If ROE > K \qquad then Market/Book > 1$ $If ROE = K \qquad then Market/Book = 1$	
If ROE < K then Market/Book < 1	
To assess the relationship by industry, as suggested above, I performed a regress	sion
study between estimated ROE and market-to-book ratios of the Electric Proxy Gr	oup
companies. The results are presented in Figure 9. The average R-square is $0.58$ . <sup>13</sup>	Гhis
demonstrates the strong positive relationship between ROEs and market-to-book ratios	for
public utilities. Given that the market-to-book ratios have been above 1.0 for a numbe	r of

<sup>&</sup>lt;sup>12</sup> Benjamin C. Esty, Note on Value Drivers, HARVARD BUSINESS SCHOOL BACKGROUND NOTE 297-082, April 1997.

<sup>&</sup>lt;sup>13</sup> R-square measures the percent of variation in one variable (e.g., market-to-book ratios) explained by another variable (e.g., expected ROE). R-squares vary between 0 and 1.0, with values closer to 1.0 indicating a higher relationship between two variables.

- 1 years, this also demonstrates that utilities have been earning ROEs above the cost of equity
- 2 capital for many years.

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# 8 Q. WHAT FACTORS DETERMINE INVESTORS' EXPECTED OR REQUIRED 9 RATE OF RETURN ON EQUITY?

The expected or required rate of return on common stock is a function of market-wide as 10 A. 11 well as company-specific factors. The most important market factor is the time value of 12 money, as indicated by the level of interest rates in the economy. Common-stock investor 13 requirements generally increase and decrease with like changes in interest rates. The 14 perceived risk of a firm is the predominant factor that influences investor return 15 requirements on a company-specific basis. A firm's investment risk is often separated into 16 business risk and financial risk. Business risk encompasses all factors that affect a firm's 17 operating revenues and expenses. Financial risk results from incurring fixed obligations in 18 the form of debt in financing its assets.

# 1Q.HOW DOES THE INVESTMENT RISK OF UTILITIES COMPARE WITH THAT2OF OTHER INDUSTRIES?

A. Due to the essential nature of their service as well as their regulated status, public utilities are exposed to a lesser degree of business risk than other non-regulated businesses. The relatively low level of business risk allows public utilities to meet much of their capital requirements through borrowing in the financial markets, thereby incurring greater than average financial risk. Nonetheless, the overall investment risk of public utilities is below most other industries.

9 Table 6 provides an assessment of investment risk for 91 industries as measured by 10 beta, which, according to modern capital market theory, is the only relevant measure of 11 investment risk. These betas come from the *Value Line Investment Survey*. The study 12 shows that the investment risk of utilities is low compared to other industries.<sup>14</sup> The 13 average betas for electric, gas, and water utility companies are 0.96, 0.94, and .88, 14 respectively.<sup>15</sup> As such, the cost of equity for utilities is among the lowest of all industries 15 in the U.S., based on modern capital market theory.

<sup>&</sup>lt;sup>14</sup> The overall stock market has a beta of 1.0. A stock whose price movement is greater than that of the market, such as a technology stock, is riskier than the market and has a beta greater than 1.0. A stock with below-average price movement, such as that of a regulated public utility, is less risky than the market and has a beta less than 1.0. However, *Value Line* betas are computed differently than betas from other sources, such as Yahoo Finance, and are generally higher than other betas. For example, as shown in Table 6, the average beta for all 1,700 companies covered by *Value Line* is 1.14 and not the market average of 1.00. This is discussed in more detail in the CAPM section of the testimony.

<sup>&</sup>lt;sup>15</sup> The beta for the *Value Line* electric utilities is the simple average of *Value Line*'s Electric East (0.97), Central (0.93), and West (0.99) group betas.

	Tab	le 6	
Industr	y Ave	rage Be	tas*
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#### Value Line Investment Survey Betas\*\*

Industry Average Betas\* Value Line Investment Survey Betas\*\* 20 Feb 25

Rank	Industry	Beta	Rank	Industry	Beta	Rank	Industry	Beta
1	Hotel/Gaming	1.46	32	Electrical Equipment	1.21	63	Chemical (Basic)	1.07
2	Public/Private Equity	1.44	33	Computer Software	1.21	64	Human Resources	1.07
3	Advertising	1.41	34	Healthcare Information	1.21	65	Educational Services	1.07
4	Homebuilding	1.40	35	Toiletries/Cosmetics	1.20	66	Packaging & Container	1.06
5	Apparel	1.36	36	R.E.I.T.	1.19	67	Pipeline MLPs	1.06
6	Insurance (Life)	1.36	37	Machinery	1.19	68	Information Services	1.05
7	Air Transport	1.35	38	Bank	1.18	69	Retail Building Supply	1.04
8	Shoe	1.34	39	Paper/Forest Products	1.18	70	Railroad	1.04
9	Metals & Mining (Div.)	1.34	40	Med Supp Invasive	1.18	71	IT Services	1.04
10	Retail (Softlines)	1.33	41	Semiconductor	1.17	72	Retail Store	1.03
11	Auto Parts	1.32	42	Chemical (Diversified)	1.16	73	Cable TV	1.02
12	Building Materials	1.31	43	Computers/Peripherals	1.15	74	Investment Co.	0.99
13	Financial Svcs. (Div.)	1.30	44	Maritime	1.14	75	Electric Utility (West)	0.99
14	Metal Fabricating	1.30	45	Industrial Services	1.14	76	Telecom. Services	0.98
15	Oilfield Svcs/Equip.	1.29	46	E-Commerce	1.14	77	Med Supp Non-Invasive	0.98
16	Retail (Hardlines)	1.29	47	Reinsurance	1.14	78	Environmental	0.97
17	Power	1.28	48	Chemical (Specialty)	1.13	79	Electric Utility (East)	0.97
18	Furn/Home Furnishings	1.28	49	Publishing	1.13	80	Trucking	0.95
19	Restaurant	1.27	50	Entertainment	1.12	81	Natural Gas Utility	0.94
20	Entertainment Tech	1.27	51	Diversified Co.	1.11	82	Drug	0.93
21	Recreation	1.26	52	Precision Instrument	1.11	83	Electric Util. (Central)	0.93
22	Steel	1.26	53	Investment Co.(Foreign)	1.11	84	Beverage	0.92
23	Retail Automotive	1.26	54	Thrift	1.11	85	Tobacco	0.92
24	Automotive	1.25	55	Engineering & Const	1.10	86	Water Utility	0.88
25	Internet	1.25	56	Insurance (Prop/Cas.)	1.10	87	Precious Metals	0.85
26	Aerospace/Defense	1.24	57	Medical Services	1.10	88	Household Products	0.84
27	Petroleum (Producing)	1.24	58	Heavy Truck & Equip	1.10	89	Retail/Wholesale Food	0.83
28	Bank (Regional)	1.24	59	Electronics	1.09	90	Biotechnology	0.83
29	Petroleum (Integrated)	1.24	60	Telecom. Equipment	1.08	91	Food Processing	0.78
30	Semiconductor Equip	1.24	61	Natural Gas (Div.)	1.08			
31	Wireless Networking	1.22	62	Oil/Gas Distribution	1.07		Mean	1.14

\* Industry averages for 91 industries using Value Line's database of 1,700 companies - Updated 2-20-25.

\*\* Value Line computes betas using monthly returns regressed against the New York Stock Exchange Index for five years. These betas are then adjusted as follows: VZ Beta = [{(2/3) \* Regressed Beta} + {(1/3) \* (1.0)}] to account to tendency for Betas to regress toward average of 1.0. See M. Blume, "On the Assessment of Risk," Journal of Finance, March 1971.

#### **3 Q. WHAT IS THE COST OF COMMON EQUITY CAPITAL?**

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A. The costs of debt and preferred stock are normally based on historical or book values and
can be determined with a great degree of accuracy. The cost of common equity capital,
however, cannot be determined precisely and must instead be estimated from market data
and informed judgment. This return requirement of the stockholder should be
commensurate with the return requirement on investments in other enterprises having
comparable risks.

10 According to valuation principles, the present value of an asset equals the 11 discounted value of its expected future cash flow. Investors discount these expected cash 12 flows at their required rate of return that, as noted above, reflects the time value of money

1	and the perceived riskiness of the expected future cash flows. As such, the cost of common
2	equity is the rate at which investors discount expected cash flows associated with common
3	stock ownership.

4 5

#### Q. HOW CAN THE EXPECTED OR REQUIRED RATE OF RETURN ON COMMON EQUITY CAPITAL BE DETERMINED?

A. Models have been developed to ascertain the cost of common equity capital for a firm.
Each model, however, has been developed using restrictive economic assumptions.
Consequently, judgment is required in selecting appropriate financial valuation models to
estimate a firm's cost of common equity capital, in determining the data inputs for these
models, and in interpreting the models' results. All of these decisions must take into
consideration the firm involved as well as current conditions in the economy and the
financial markets.

### Q. HOW DID YOU ESTIMATE THE COST OF EQUITY CAPITAL FOR THE COMPANIES?

A. Primarily, I rely on the DCF model to estimate the cost-of-equity capital. Given the investment-valuation process and the relative stability of the utility business, the DCF model provides the best measure of equity cost rates for public utilities. I have also performed an analysis using the CAPM; however, I give these results less weight because I believe that risk-premium studies, of which the CAPM is one form, provide a less reliable indication of equity-cost rates for public utilities.

### Q. PLEASE EXPLAIN WHY YOU BELIEVE THAT THE CAPM PROVIDES A LESS RELIABLE INDICATOR OF EQUITY COST RATES.

- A. I believe that the CAPM provides a less reliable measure of a utility's equity-cost rate because it requires an estimate of the market-risk premium. As discussed below, there is a wide variation in estimates of the market-risk premium found in studies by academics and investment firms, as well as in surveys of market professionals.
- 7

#### **B.** Discounted Cash Flow (DCF) Approach

# 8 Q. PLEASE DESCRIBE THE THEORY BEHIND THE TRADITIONAL DCF 9 MODEL.

10 A. According to the DCF model, the current stock price is equal to the discounted value of all 11 future dividends that investors expect to receive from investment in the firm. As such, 12 stockholders' returns ultimately result from current as well as future dividends. As owners 13 of a corporation, common stockholders are entitled to a pro rata share of the firm's 14 earnings. The DCF model presumes that earnings that are not paid out in the form of 15 dividends are reinvested in the firm to provide for future growth in earnings and dividends. 16 The rate at which investors discount future dividends, which reflects the timing and 17 riskiness of the expected cash flows, is interpreted as the market's expected or required 18 return on the common stock. Therefore, this discount rate represents the cost of common 19 equity. Algebraically, the DCF model can be expressed as:

20 
$$P = \frac{D_1}{(1+k)^1} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_n}{(1+k)^n}$$

1 where P is the current stock price,  $D_1$ ,  $D_2$ ,  $D_n$  are the dividends in (respectively) year 1, 2, 2 and in the future years n, and k is the cost of common equity.

# 3 Q. IS THE DCF MODEL CONSISTENT WITH VALUATION TECHNIQUES 4 EMPLOYED BY INVESTMENT FIRMS?

5 Yes. Virtually all investment firms use some form of the DCF model as a valuation A. technique. One common application for investment firms is called the three-stage DCF or 6 dividend discount model ("DDM"). The stages in a three-stage DCF model are shown in 7 8 Figure 10. This model presumes that a company's dividend payout progresses initially 9 through a growth stage, then proceeds through a transition stage, and finally assumes a 10 maturity (or steady-state) stage. The dividend-payment stage of a firm depends on the 11 profitability of its internal investments, which, in turn, is largely a function of the life cycle 12 of the product or service.

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- 14

Figure 10 The Three-Stage Dividend Discount Model



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161.Growth stage: Characterized by rapidly expanding sales, high profit margins, and17an abnormally high growth in earnings per share. Because of highly profitable18expected investment opportunities, the payout ratio is low. Competitors are19attracted by the unusually high earnings, leading to a decline in the growth rate.

**Transition stage:** In later years, increased competition reduces profit margins and

2 earnings growth slows. With fewer new investment opportunities, the company 3 begins to pay out a larger percentage of earnings. 4 Maturity (steady-state) stage: Eventually, the company reaches a position where 3. its new investment opportunities offer, on average, only slightly more attractive 5 6 ROEs. At that time, its earnings growth rate, payout ratio, and ROE stabilize for 7 the remainder of its life. As I will explain below, the constant-growth DCF model 8 is appropriate when a firm is in the maturity stage of the life cycle.<sup>16</sup> 9 10 In using the three-stage model to estimate a firm's cost of equity capital, dividends 11 are projected into the future using the different growth rates in the alternative stages, and 12 then the equity-cost rate is the discount rate that equates the present value of the future 13 dividends to the current stock price. PLEASE BRIEFLY EXPLAIN THE CONCEPT OF "PRESENT VALUE." 14 0. 15 A. Present value is the concept that an amount of money today is worth more than that same 16 amount in the future. In other words, money received in the future is not worth as much 17 as an equal amount received today. Present value tells an investor how much he or she 18 would need in today's dollars to earn a specific amount in the future. 19 HOW DO YOU ESTIMATE STOCKHOLDERS' EXPECTED OR REQUIRED **Q**. **RATE OF RETURN USING THE DCF MODEL?** 20 Under certain assumptions, including a constant and infinite expected growth rate, and 21 A. 22 constant dividend/earnings and price/earnings ratios, the DCF model can be simplified to 23 the following:

$$P = \frac{D}{k}$$

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<sup>&</sup>lt;sup>16</sup> William Sharpe, Gordon Alexander, and Jeffer Bailey, *Investments*, 1995, pp. 590-1.

1 where P is the current stock price,  $D_1$  represents the expected dividend over the coming 2 year, k is investor's required return on equity, and g is the expected growth rate of 3 dividends. This is known as the constant-growth version of the DCF model. To use the 4 constant-growth DCF model to estimate a firm's cost of equity, one solves for "k" in the 5 above expression to obtain the following:

$$6 k = \frac{D_1}{P} + g$$

### 7 Q. IN YOUR OPINION, IS THE CONSTANT-GROWTH DCF MODEL 8 APPROPRIATE FOR PUBLIC UTILITIES?

9 A. Yes. The economics of the public utility business indicate that the industry is in the steady-10 state or constant-growth stage of a three-stage DCF. The economics include the relative 11 stability of the utility business, the maturity of the demand for public utility services, and 12 the regulated status of public utilities (especially the fact that, as monopolies, their returns 13 on investment are effectively set through the ratemaking process). The DCF valuation 14 procedure for companies in this stage is the constant-growth DCF. In the constant-growth 15 version of the DCF model, the current dividend payment and stock price are directly 16 observable. However, the primary problem and controversy in applying the DCF model to 17 estimate equity-cost rates entails estimating investors' expected dividend growth rate.

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### Q. WHAT FACTORS SHOULD ONE CONSIDER WHEN APPLYING THE DCF METHODOLOGY?

A. One should be sensitive to several factors when using the DCF model to estimate a firm's
 cost of equity capital. In general, one must recognize the assumptions under which the
 DCF model was developed in estimating its components (the dividend yield and the

1 expected growth rate). The dividend yield can be measured precisely at any point in time; 2 however, it tends to vary somewhat over time. Estimation of expected growth is 3 considerably more difficult. One must consider recent firm performance, in conjunction 4 with current economic developments and other information available to investors, in order 5 to accurately estimate investors' expectations.

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#### Q. WHAT DIVIDEND YIELDS HAVE YOU REVIEWED?

7 A. I have calculated the dividend yields for the companies in the proxy groups using the 8 current annual dividend and the 30-day, 90-day, and 180-day average stock prices. These 9 dividend yields are provided in Panels A and B of page 2 of Exhibit JRW-5. I have shown 10 the mean and median dividend yields using 30-day, 90-day, and 180-day average stock prices. 11 For the Electric Proxy Group, the dividend yields range from 3.20% to 3.60%. I will use 12 the midpoint of this range, 3.40%, as the dividend yield for the Electric Proxy Group.<sup>17</sup> 13 For the Bulkley Proxy Group, the dividend yield results range from 3.10% to 3.50%. I will 14 use the midpoint of this range, 3.30%, as the dividend yield for the Bulkley Proxy Group.

#### 15 PLEASE DISCUSS THE APPROPRIATE ADJUSTMENT TO THE SPOT Q. 16 **DIVIDEND YIELD.**

17 According to the traditional DCF model, the dividend yield term relates the dividend paid A. 18 over the coming period to the current stock price. As indicated by Professor Myron 19 Gordon, who is commonly associated with the development of the DCF model for popular 20 use, this is obtained by: (1) multiplying the expected dividend over the coming quarter by

<sup>17</sup> For the dividend yields and ROEs, I round to the nearest .05%.

4, and (2) dividing this dividend by the current stock price to determine the appropriate
 dividend yield for a firm that pays dividends on a quarterly basis.<sup>18</sup>

In applying the DCF model, some analysts adjust the current dividend for growth over the coming year as opposed to the coming quarter. This can be complicated because firms tend to announce changes in dividends at different times during the year. As such, computing the dividend yield based on presumed growth over the coming quarter as opposed to the coming year can produce quite different results. Consequently, it is common for analysts to adjust the dividend yield by some fraction of the long-term expected growth rate.

### Q. GIVEN THIS DISCUSSION, WHAT ADJUSTMENT FACTOR DO YOU USE FOR YOUR DIVIDEND YIELD?

- A. I adjust the dividend yield by one-half (1/2) of the expected growth to reflect growth over
  the coming year. The DCF equity-cost rate ("K") is computed as:
- 14  $K = \left[ \left( \frac{D}{P} \right) \times (1 + 0.5g) \right] + g$

#### 15 Q. PLEASE DISCUSS THE GROWTH RATE COMPONENT OF THE DCF MODEL.

A. There is debate as to the proper methodology to employ in estimating the growth
 component of the DCF model. By definition, this component is investors' expectations of
 the long-term dividend growth rate. Presumably, investors use some combination of
 historical and/or projected growth rates for earnings and dividends per share and for
 internal or book-value growth to assess long-term potential.

<sup>&</sup>lt;sup>18</sup> Petition for Modification of Prescribed Rate of Return, Federal Communications Commission, Docket No. 79-05, Direct Testimony of Myron J. Gordon and Lawrence I. Gould at 62 (April 1980).

#### 1 Q. WHAT GROWTH DATA HAVE YOU REVIEWED FOR THE PROXY GROUPS?

2 I have analyzed a number of measures of growth for companies in the proxy groups. I A. 3 reviewed Value Line's historical and projected growth-rate estimates for EPS, dividends 4 per share ("DPS"), and book value per share ("BVPS"). In addition, I utilized the average 5 EPS growth-rate forecasts of Wall Street analysts as provided by Yahoo, Zacks, and S&P 6 Cap IQ. These services solicit five-year earnings growth-rate projections from securities 7 analysts and compile and publish the means and medians of these forecasts. Finally, I also 8 assessed prospective growth as measured by prospective earnings retention rates and 9 earned returns on common equity.

### Q. PLEASE DISCUSS HISTORICAL GROWTH IN EARNINGS AND DIVIDENDS, AS WELL AS INTERNAL GROWTH.

12 Historical growth rates for EPS, DPS, and BVPS are readily available to investors and are A. 13 presumably an important ingredient in forming expectations concerning future growth. 14 However, one must use historical growth numbers as measures of investors' expectations 15 with caution. In some cases, past growth may not reflect future growth potential. Also, 16 employing a single growth-rate number (for example, for five or ten years) is unlikely to 17 accurately measure investors' expectations, due to the sensitivity of a single growth-rate 18 figure to fluctuations in individual firm performance as well as overall economic 19 fluctuations (*i.e.*, business cycles). Thus, one must appraise the context in which the growth 20 rate is being employed. According to the conventional DCF model, the expected return on 21 a security is equal to the sum of the dividend yield and the expected long-term growth in dividends. Therefore, to best estimate the cost of common-equity capital using the
 conventional DCF model, one must look to long-term growth rate expectations.

#### **3 Q. PLEASE DEFINE AND EXPLAIN THE RELEVANCE OF INTERNAL GROWTH.**

- A. A company's internal (or "organic") growth occurs when a business expands its own
  operations rather than relying on takeovers and mergers. It can come about through various
  means, for example, increasing the existing production capacity through investment in new
  capital and technology, or development and launch of new products.
- 8 Internally generated growth is a function of the percentage of earnings retained 9 within the firm (the earnings retention rate) and the rate of return earned on those earnings 10 (the ROE). The internal growth rate is computed as the retention rate times the ROE. 11 Internal growth is significant in determining long-run earnings and, therefore, dividends. 12 Investors recognize the importance of internally-generated growth and pay premiums for 13 stocks of companies that retain earnings and earn high returns on internal investments.

### 14 Q. PLEASE DISCUSS THE SERVICES THAT PROVIDE ANALYSTS' EPS 15 FORECASTS.

A. Analysts' EPS forecasts for companies are collected and published by several different
investment information services, including Institutional Brokers Estimate System
("I/B/E/S"), Bloomberg, FactSet, S&P Cap IQ, Zacks, First Call, and Reuters, among
others. Thomson Reuters publishes analysts' EPS forecasts under different product names,
including I/B/E/S, First Call, and Reuters. Bloomberg, FactSet, S&P Cap IQ, and Zacks
each publish their own set of analysts' EPS forecasts for companies. These services do not
reveal (1) the analysts who are solicited for forecasts; or (2) the identity of the analysts who

1 actually provide the EPS forecasts that are used in the compilations published by the 2 services. I/B/E/S, Bloomberg, FactSet, S&P Cap IQ, and First Call are fee-based services. 3 These services usually provide detailed reports and other data in addition to analysts' EPS 4 forecasts. In contrast, Thomson Reuters and Zacks provide limited EPS forecast data free-5 of-charge on the Internet. Yahoo finance (http://finance.yahoo.com) lists Thomson Reuters 6 as the source of its summary EPS forecasts. Zacks (www.zacks.com) publishes its summary 7 forecasts on its website. Zacks estimates are also available on other websites, such as 8 MSN.Money (http://money.msn.com).

# 9 Q. ARE YOU RELYING EXCLUSIVELY ON THE EPS FORECASTS OF WALL 10 STREET ANALYSTS IN ARRIVING AT A DCF GROWTH RATE FOR THE 11 PROXY GROUP?

12 No. There are several issues with using the EPS growth rate forecasts of Wall Street A. 13 analysts as DCF growth rates. First, the appropriate growth rate in the DCF model is the 14 dividend growth rate, not the earnings growth rate. Nonetheless, over the very long term, dividends and earnings will have to grow at a similar rate. Therefore, consideration must 15 16 be given to other indicators of growth, including prospective dividend growth, internal 17 growth, as well as projected earnings growth. Second, a study by Lacina, Lee, and Xu 18 (2011) has shown that analysts' three-to-five year EPS growth-rate forecasts are not more 19 accurate at forecasting future earnings than naïve random walk forecasts of future 20 earnings.<sup>19</sup> Employing data over a twenty-year period, these authors demonstrate that

<sup>&</sup>lt;sup>19</sup> M. Lacina, B. Lee & Z. Xu, *Advances in Business and Management Forecasting (Vol. 8)*, Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp. 77-101. According to random walk theory in this context, annual changes in earnings are normally distributed and are independent of each other. Therefore, the theory presumes the past movement or trend of earnings cannot be used to predict its future earnings.

using the most recent year's actual EPS figure to forecast EPS in the next three-to-five 1 2 years proved to be just as accurate as using the EPS estimates from analysts' three-to-five 3 year EPS growth-rate forecasts. In the authors' opinion, these results indicate that analysts' long-term earnings growth-rate forecasts should be used with caution as inputs for 4 5 valuation and cost of capital purposes. Finally, and most significantly, it is well known 6 that the long-term EPS growth-rate forecasts of Wall Street securities analysts are overly 7 optimistic and upwardly biased. This has been demonstrated in a number of academic studies over the years.<sup>20</sup> Hence, using these growth rates as a DCF growth rate will provide 8 9 an overstated equity cost rate. On this issue, a study by Easton and Sommers (2007) found that optimism in analysts' growth rate forecasts leads to an upward bias in estimates of the 10 11 cost of equity capital of almost 3.0 percentage points.<sup>21</sup>

### 12 Q. ARE ANALYSTS' PROJECTED EPS GROWTH RATES FOR ELECTRIC 13 UTILITIES LIKEWISE OVERLY OPTIMISTIC AND UPWARDLY BIASED?

A. Yes. I have completed a study of the accuracy of analysts' EPS growth rates for electric
 utilities and gas distribution companies over the 1985 to 2022 time period. In the study, I
 used the utilities listed in the electric utilities and gas distribution companies covered by
 *Value Line*. I collected the three-to-five-year projected EPS growth rate from I/B/E/S for

<sup>&</sup>lt;sup>20</sup> The studies that demonstrate analysts' long-term EPS forecasts are overly-optimistic and upwardly biased include: R.D. Harris, "The Accuracy, Bias, and Efficiency of Analysts' Long Run Earnings Growth Forecasts," *Journal of Business Finance & Accounting*, pp. 725-55 (June/July 1999); P. DeChow, A. Hutton, and R. Sloan, "The Relation Between Analysts' Forecasts of Long-Term Earnings Growth and Stock Price Performance Following Equity Offerings," *Contemporary Accounting Research* (2000); K. Chan, L., Karceski, J., & Lakonishok, J., "The Level and Persistence of Growth Rates," *Journal of Finance*, pp. 643–684, (2003); M. Lacina, B. Lee, and Z. Xu, *Advances in Business and Management Forecasting (Vol. 8)*, Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101; and Marc H. Goedhart, Rishi Raj, and Abhishek Saxena, "Equity Analysts, Still Too Bullish," *McKinsey on Finance*, pp. 14-17, (Spring 2010).

<sup>&</sup>lt;sup>21</sup> Peter D. Easton & Gregory A. Sommers, *Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts*, 45 J. ACCT. RES. 983–1015 (2007).

1	each utility and compared that growth rate to the utility's actual subsequent three-to-five-
2	year EPS growth rate. As shown in Figure 11, the mean forecasted EPS growth rate
3	(depicted in the red line in Figure 11) is consistently greater than the achieved actual EPS
4	growth rate over the time period, with the exception of a few short periods. Over the entire
5	period, the mean forecasted EPS growth rate is over 200 basis points above the actual EPS
6	growth rate. As such, the projected EPS growth rates for electric utilities are overly
7	optimistic and upwardly based.





Data Source: S&P Global Market Intelligence, Capital IQ, I/B/E/S, 2023.

#### 16 Q. ARE THE PROJECTED EPS GROWTH RATES OF VALUE LINE ALSO

17 **OVERLY OPTIMISTIC AND UPWARDLY BIASED?** 

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A. Yes. A study by Szakmary, Conover, and Lancaster ("SCL") (2008) evaluated the
 accuracy of *Value Line*'s three-to-five-year EPS growth rate forecasts using companies in
 the Dow Jones Industrial Average over a thirty-year time period and found these forecasted

1 EPS growth rates to be significantly higher than the EPS growth rates that these companies subsequently achieved.<sup>22</sup> SCL studied the predicted versus the projected stock returns, 2 3 sales, profit margins, and earnings per share made by Value Line over the 1969 to 2001 4 time period. Value Line projects variables from a three-year base period (e.g., 2012 to 5 2014) to a future three-year projected period (e.g., 2016 to 2018). SCL used the 65 stocks 6 included in the Dow Jones Indexes (30 Industrials, 20 Transports and 15 Utilities). SCL 7 found that the projected annual stock returns for the Dow Jones stocks were "incredibly 8 overoptimistic" and of no predictive value. The mean annual stock return of 20% for the 9 Dow Jones stocks' Value Line's forecasts was nearly double the realized annual stock 10 return. The authors also found that Value Line's forecasts of EPS and profit margins were 11 "strikingly overoptimistic." Value Line's forecasts of annual sales were higher than 12 achieved levels, but not statistically significant. SCL concluded that the overly optimistic 13 projected annual stock returns were attributable to Value Line's upwardly biased forecasts 14 of EPS and profit margins.

### Q. IS IT YOUR OPINION THAT STOCK PRICES REFLECT THE UPWARD BIAS IN THE EPS GROWTH RATE FORECASTS?

# A. Yes, I do believe that investors are well-aware of the bias in analysts' EPS growth-rate forecasts, and therefore, stock prices reflect the upward bias.

<sup>&</sup>lt;sup>22</sup> Szakmary, A., Conover, C., & Lancaster, C., An Examination of Value Line's Long-Term Projections, J. BANKING & FIN., May 2008, at 820–33.

### Q. HOW DOES THAT AFFECT THE USE OF THESE FORECASTS IN A DCF EQUITY COST RATE STUDY?

A. According to the DCF model, the equity cost rate is a function of the dividend yield and expected growth rate. Because I believe that investors are aware of the upward bias in analysts' long-term EPS growth-rate forecasts, stock prices reflect the bias. But the DCF growth rate needs to be adjusted downward from the projected EPS growth rate to reflect the upward bias in the DCF model.

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#### Q. PLEASE DISCUSS THE HISTORICAL GROWTH OF THE COMPANIES IN THE PROXY GROUPS, AS PROVIDED BY *VALUE LINE*.

10 A. Page 3 of Exhibit JRW-5 provides the 5-year and 10- year historical growth rates for EPS, 11 DPS, and BVPS for the companies in the two proxy groups, as published in the Value Line 12 Investment Survey. The median historical growth measures for EPS, DPS, and BVPS for 13 the Electric Proxy Group, as provided in Panel A, range from 3.50% to 4.80%, with an 14 average of the medians of 4.00%. For the Bulkley Proxy Group, as shown in Panel B of 15 page 3 of Exhibit JRW-5, the historical growth measures in EPS, DPS, and BVPS, as 16 measured by the medians, range from 3.50% to 5.50%, with an average of the medians of 17 4.2%.

### 18 Q. PLEASE SUMMARIZE VALUE LINE'S PROJECTED GROWTH RATES FOR 19 THE COMPANIES IN THE PROXY GROUPS.

A. *Value Line's* projections of EPS, DPS, and BVPS growth for the companies in the proxy
groups are shown on page 4 of Exhibit JRW-5. As stated above, due to the presence of
outliers, the medians are used in the analysis. For the Electric Proxy Group, as shown in

1		Panel A of page 4 of Exhibit JRW-5, the medians range from 4.30% to 6.00%, with an
2		average of the medians of 5.30%. The range of the medians for the Bulkley Proxy Group,
3		shown in Panel B of page 4 of Exhibit JRW-5, is from 4.50% to 6.00%, with an average of
4		the medians of 5.20%.
5		Also provided on page 4 of Exhibit JRW-5 are the prospective sustainable growth
6		rates for the companies in the two proxy groups, as measured by Value Line's average
7		projected retention rate and return on shareholders' equity. As noted above, sustainable
8		growth is a significant and a primary driver of long-run earnings growth. For the Electric
9		Proxy Group and Bulkley Proxy Group, the median prospective sustainable growth rates
10		are 4.30% and 3.90%, respectively.
11	Q.	PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BY
11 12	Q.	PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BY ANALYSTS' FORECASTS OF EXPECTED THREE-TO-FIVE YEAR EPS
11 12 13	Q.	PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BY ANALYSTS' FORECASTS OF EXPECTED THREE-TO-FIVE YEAR EPS GROWTH.
11 12 13 14	<b>Q.</b> A.	PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BYANALYSTS' FORECASTS OF EXPECTED THREE-TO-FIVE YEAR EPSGROWTH.Yahoo, Zacks, and S&P Cap IQ collect, summarize, and publish Wall Street analysts'
11 12 13 14 15	<b>Q.</b> A.	PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BYANALYSTS' FORECASTS OF EXPECTED THREE-TO-FIVE YEAR EPSGROWTH.Yahoo, Zacks, and S&P Cap IQ collect, summarize, and publish Wall Street analysts'three-to-five-year EPS growth-rate forecasts for the companies in the proxy groups. These
11 12 13 14 15 16	<b>Q.</b> A.	PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BYANALYSTS' FORECASTS OF EXPECTED THREE-TO-FIVE YEAR EPSGROWTH.Yahoo, Zacks, and S&P Cap IQ collect, summarize, and publish Wall Street analysts'three-to-five-year EPS growth-rate forecasts for the companies in the proxy groups. Theseforecasts are provided for the companies in the proxy groups on page 5 of Exhibit JRW-5.
<ol> <li>11</li> <li>12</li> <li>13</li> <li>14</li> <li>15</li> <li>16</li> <li>17</li> </ol>	<b>Q.</b> A.	PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BYANALYSTS' FORECASTS OF EXPECTED THREE-TO-FIVE YEAR EPSGROWTH.Yahoo, Zacks, and S&P Cap IQ collect, summarize, and publish Wall Street analysts'three-to-five-year EPS growth-rate forecasts for the companies in the proxy groups. Theseforecasts are provided for the companies in the proxy groups on page 5 of Exhibit JRW-5.I have reported both the mean and median growth rates for the groups. Since there is
<ol> <li>11</li> <li>12</li> <li>13</li> <li>14</li> <li>15</li> <li>16</li> <li>17</li> <li>18</li> </ol>	<b>Q.</b>	<ul> <li>PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BY</li> <li>ANALYSTS' FORECASTS OF EXPECTED THREE-TO-FIVE YEAR EPS</li> <li>GROWTH.</li> <li>Yahoo, Zacks, and S&amp;P Cap IQ collect, summarize, and publish Wall Street analysts'</li> <li>three-to-five-year EPS growth-rate forecasts for the companies in the proxy groups. These</li> <li>forecasts are provided for the companies in the proxy groups on page 5 of Exhibit JRW-5.</li> <li>I have reported both the mean and median growth rates for the groups. Since there is</li> <li>considerable overlap in analyst coverage between the three services, and not all of the</li> </ul>
<ol> <li>11</li> <li>12</li> <li>13</li> <li>14</li> <li>15</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> </ol>	<b>Q.</b>	PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BY ANALYSTS' FORECASTS OF EXPECTED THREE-TO-FIVE YEAR EPS GROWTH. Yahoo, Zacks, and S&P Cap IQ collect, summarize, and publish Wall Street analysts' three-to-five-year EPS growth-rate forecasts for the companies in the proxy groups. These forecasts are provided for the companies in the proxy groups on page 5 of Exhibit JRW-5. I have reported both the mean and median growth rates for the groups. Since there is considerable overlap in analyst coverage between the three services, and not all of the companies have forecasts from the different services, I have averaged the expected five-year

1		growth rate for each company. The mean/median of analysts' projected EPS growth rates
2		for the Electric and Bulkley Proxy Groups are 7.0%/7.1% and 7.0%/7.0%, respectively. <sup>23</sup>
3	Q.	PLEASE SUMMARIZE YOUR ANALYSIS OF THE HISTORICAL AND
4		PROSPECTIVE GROWTH OF THE PROXY GROUPS.
5	A.	Page 6 of Exhibit JRW-5 shows the summary of DCF growth rate indicators for the proxy
6		groups.
7		The historical growth rate indicators for my Electric Proxy Group imply a baseline
8		growth rate of 4.00%. The average of the projected EPS, DPS, and BVPS growth rates
9		from Value Line is 5.3%, and Value Line's projected sustainable growth rate is 4.3%. The
10		projected EPS growth rates of Wall Street analysts for the Electric Proxy Group are 7.00%
11		and 7.10% (average = $7.05\%$ ) as measured by the mean and median growth rates. The
12		overall range for the projected growth-rate indicators (ignoring historical growth) is 4.30%
13		to 7.05%, and the average of the three projected growth rates is 5.50% (5.3%, 4.3%,
14		7.05%). Giving primary weight to the projected growth rates of Wall Street analysts and
15		Value Line, but recognizing the upward bias nature of these forecasts, I believe that the
16		appropriate projected growth rate is the range of 5.50% to 7.05%. Given this range, I will
17		use 6.20%, which is the midpoint of the range, for my DCF growth rate for the Electric
18		Proxy Group. This growth rate figure is in the upper end of the range of historic and
19		projected growth rates for the group.
20		For the Bulkley Proxy Group, the historical growth rate indicators suggest a growth

rate of 4.2%. The average of the projected EPS, DPS, and BVPS growth rates from Value

Given variation in the measures of central tendency of analysts' projected EPS growth rates proxy groups, I have considered both the means and medians figures in the growth rate analysis.

1		Line is 5.2%, and Value L	ine's projec	ted sustainable	growth rate is 3	.9%. The projec	cted
2		EPS growth rates of Wall	Street analy	sts are both 7.0	00% (average = 7	.00%) as measu	ıred
3		by the mean and median	growth rates	s. The overall	range for the pro	jected growth-	rate
4		indicators (ignoring histor	ical growth)	) is 3.90% to 7	7.00% and the av	verage of the th	hree
5		projected growth rates (5.3	0%, 4.3%, 7	.00%) is 5.5%.	Again, giving pr	imary weight to	o the
6		projected EPS growth rate	of Wall Stre	eet analysts but	recognizing the	upward bias nat	ture
7		of these forecasts, I believe	e that the ap	propriate DCF	growth rate range	e is 5.5% to 7.03	5%.
8		Given this range, I will use	6.30%, whi	ch is the midpo	int of the range, f	for my DCF gro	wth
0		rate for the Bulkley Provy (	Group As w	ith the Electric	Provy Group thi	s growth rate fig	סיוור
7		Tate for the Burkley Proxy C	Sloup. As w		Tioxy Gloup, un	s giowiii iaic iig	zure
10		is in the upper end of the ra	nge of histor	ric and projecte	d growth rates for	r the Bulkley Pr	oxy
11		Group.					
12	Q.	BASED ON THE AB	OVE ANA	ALYSIS, WH	AT ARE YOU	UR INDICAT	ED
13		COMMON EQUITY CO	ST RATES	FROM THE	DCF MODEL F	OR THE PRO	XY
14		GROUPS?					
15	A.	My DCF-derived equity c	ost rates for	the groups are	e summarized on	page 1 of Exh	nibit
16		JRW-5 and in Table 7 belo	ow.				
17			т	ahla 1			
18		DCF	-Derived Ed	quity Cost Rat	e/ROE		
			Dividend	1 + 1/2	DCF	Equity	1
			Yield	Growth Adjustment	Growth Rate	Cost Rate	
		Electric Proxy Group	3.40%	1.0315	6.30%	9.80%	1
		Bulkley Proxy Group	3.30%	1.0310	6.20%	9.60%	1
19							
20		The result for the E	Electric Prox	y Group is the	3.40% dividend	yield, times the	one

and one-half growth adjustment of 1.0315, plus the DCF growth rate of 6.20%, which

1	results in an equity cost rate of 9.80%. The result for the Bulkley Proxy Group is 9.60%,
2	which includes a dividend yield of 3.30%, an adjustment factor of 1.0310, and a DCF
3	growth rate of 6.20%.

#### C. Capital Asset Pricing Model ("CAPM")

4 Q. PLEASE

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#### PLEASE DISCUSS THE CAPM.

A. The CAPM is a risk premium approach to gauging a firm's cost of equity capital.
According to the risk premium approach, the cost of equity is the sum of the interest rate
on a risk-free bond (R<sub>f</sub>) and a risk premium (RP), as in the following:

 $\mathbf{k} = \mathbf{R}_{\mathbf{f}} + \mathbf{R}\mathbf{P}$ 

10The yield on long-term U.S. Treasury securities is normally used as Rf. Risk11premiums are measured in different ways. The CAPM is a theory of the risk and expected12returns of common stocks. In the CAPM, two types of risk are associated with a stock:13firm-specific risk or unsystematic risk, and market or systematic risk, which is measured14by a firm's beta. The only risk that investors receive a return for bearing is systematic risk.15According to the CAPM, the expected return on a company's stock, which is also16the equity cost rate (K), is equal to:

$$K = (R_f) + \beta \times [E(R_m) - (R_f)]$$

18 Where:

17

19K represents the estimated rate of return on the stock;20 $E(R_m)$  represents the expected return on the overall stock market. (Frequently, the21'market' refers to the S&P 500);22 $(R_f)$  represents the risk-free rate of interest;

1 2 3 4		$[E(R_m) - (R_f)]$ represents the expected equity or market risk premium—the excess return that an investor expects to receive above the risk-free rate for investing in risky stocks; and <i>Beta</i> —( $\beta$ ) is a measure of the systematic risk of an asset.
5		To estimate the required return or cost of equity using the CAPM requires three
6		inputs: the risk-free rate of interest $(R_f)$ , the beta $(\beta)$ , and the expected equity or market
7		risk premium $[E(R_m) - (R_f)]$ . $R_f$ is the easiest of the inputs to measure. It is represented by
8		the yield on long-term U.S. Treasury bonds. B, the measure of systematic risk, is a little
9		more difficult to measure because there are different opinions about what adjustments, if
10		any, should be made to historical betas due to their tendency to regress to 1.0 over time.
11		Finally, an even more difficult input to measure is the expected equity or market risk
12		premium $(E(R_m) - (R_f))$ . I will discuss each of these inputs below.
13	0	PLEASE DISCUSS EXHIBIT JRW-6.
15	V٠	
14	Q. A.	Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the
14 15	Q. A.	Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.
14 15 16	Q.	<ul> <li>Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.</li> <li>PLEASE DISCUSS THE RISK-FREE INTEREST RATE.</li> </ul>
14 15 16 17	Q. Q. A.	<ul> <li>Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.</li> <li>PLEASE DISCUSS THE RISK-FREE INTEREST RATE.</li> <li>The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate</li> </ul>
14 15 16 17 18	Q. A.	<ul> <li>Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.</li> <li>PLEASE DISCUSS THE RISK-FREE INTEREST RATE.</li> <li>The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in turn, has been</li> </ul>
14 15 16 17 18 19	Q. A.	<ul> <li>Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.</li> <li>PLEASE DISCUSS THE RISK-FREE INTEREST RATE.</li> <li>The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in turn, has been considered to be the yield on U.S. Treasury bonds with 30-year maturities.</li> </ul>
14 15 16 17 18 19 20	Q. A. Q.	<ul> <li>Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.</li> <li>PLEASE DISCUSS THE RISK-FREE INTEREST RATE.</li> <li>The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in turn, has been considered to be the yield on U.S. Treasury bonds with 30-year maturities.</li> <li>WHAT RISK-FREE INTEREST RATE ARE YOU USING IN YOUR CAPM?</li> </ul>
14 15 16 17 18 19 20 21	Q. A. Q. A.	<ul> <li>Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.</li> <li>PLEASE DISCUSS THE RISK-FREE INTEREST RATE.</li> <li>The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in turn, has been considered to be the yield on U.S. Treasury bonds with 30-year maturities.</li> <li>WHAT RISK-FREE INTEREST RATE ARE YOU USING IN YOUR CAPM?</li> <li>As shown on page 2 of Exhibit JRW-6, the yield on 30-year U.S. Treasury bonds has been</li> </ul>
14 15 16 17 18 19 20 21 22	Q. A. Q. A.	<ul> <li>Exhibit JRW-6 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.</li> <li>PLEASE DISCUSS THE RISK-FREE INTEREST RATE.</li> <li>The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in turn, has been considered to be the yield on U.S. Treasury bonds with 30-year maturities.</li> <li>WHAT RISK-FREE INTEREST RATE ARE YOU USING IN YOUR CAPM?</li> <li>As shown on page 2 of Exhibit JRW-6, the yield on 30-year U.S. Treasury bonds has been in the 1.3% to 5.00% range over 2010–2025. The current 30-year Treasury yield is in the</li> </ul>

# 1Q.DOESTHE5.00%RISK-FREEINTERESTRATETAKEINTO2CONSIDERATION FORECASTS OF HIGHER INTEREST RATES?

A. No, it does not. The 5.00% risk-free interest rate takes into account the range of interest rates in the past, and effectively synchronizes the risk-free rate with the market risk premium. The risk-free rate and the market risk premium are interrelated in that the market risk premium is developed in relation to the risk-free rate. As discussed below, my market risk premium is based on the results of many studies and surveys that have been published over time.

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#### Q. PLEASE DISCUSS BETAS IN THE CAPM.

Beta (B) is a measure of the systematic risk of a stock. The market (i.e., the S&P 500) has 10 A. 11 a beta of 1.0. The  $\beta$  of a stock with the same price movement as the market also has a  $\beta$  of 12 1.0. A stock whose price movement is greater than that of the market, such as a technology 13 stock, is riskier than the market and has a  $\beta$  greater than 1.0. A stock with below average 14 price movement, such as that of a regulated public utility, is less risky than the market and 15 has a ß less than 1.0. Estimating a stock's ß involves running a linear regression of a stock's 16 return on the market return. As shown on page 3 of Exhibit JRW-6, the slope of the 17 regression line is the stock's B. A steeper line indicates that the stock is more sensitive to 18 the return on the overall market. This means that the stock has a higher ß and greater-than-19 average market risk. A less steep line indicates a lower  $\beta$  and less market risk. Several 20 online investment information services, such as Yahoo and Reuters, provide estimates of 21 stock betas. Usually, these services report different betas for the same stock. The

differences are usually due to: (1) the time period over which  $\beta$  is measured; and (2) any

adjustments that are made to reflect the fact that betas tend to regress to 1.0 over time.

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Q. PLEASE DISCUSS THE 2020 CHANGE IN BETAS.

A. I have traditionally used the betas as provided in the *Value Line Investment Survey*. As
discussed above, the betas for utilities recently increased significantly because of the
volatility of utility stocks during the stock market meltdown associated with COVID in
March 2020. Utility betas as measured by *Value Line* have been in the 0.55 to 0.70 range
for the past 10 years, but utility stocks were much more volatile relative to the market in
March and April of 2020, and this resulted in an increase of above 0.30 to the average

10 utility β.

11 *Value Line* defines their computation of β as:<sup>24</sup>

Beta - A relative measure of the historical sensitivity of a stock's price to 12 13 overall fluctuations in the New York Stock Exchange Composite Index. A 14 Beta of 1.50 indicates a stock tends to rise (or fall) 50% more than the New 15 York Stock Exchange Composite Index. The "Beta coefficient" is derived from a regression analysis of the relationship between weekly percentage 16 17 changes in the price of a stock and weekly percentage changes in the NYSE 18 Index over a period of five years. In the case of shorter price histories, a 19 smaller time period is used, but two years is the minimum. The Betas are 20 adjusted for their long-term tendency to converge toward 1.00. Value Line 21 then adjusts these Betas to account for their long-term tendency to 22 converge toward 1.00.

- 23 However, there are several issues with *Value Line* betas:
- Value Line betas are computed using weekly returns, and the volatility of utility
   stocks during March 2020 was impacted by using weekly and not monthly returns.
   Yahoo Finance uses five years of monthly returns to compute betas, and Yahoo
   Finance's betas for utilities are lower than Value Line's.

<sup>&</sup>lt;sup>24</sup> https://www.valueline.com/investment-education/glossary/b.

1		2. Value Line betas are computed using the New York Stock Exchange Index as the
2		market. While about 3,000 stocks trade on the NYSE, most technology stocks are
3		traded on the NASDAQ or over-the-counter market and not the NYSE. Technology
4		stocks, which make up about 25 percent of the S&P 500, tend to be more volatile.
5		If they were traded on the NYSE, they would increase the volatility of the measure
6		of the market and thereby lower utility betas.
7		3. Major vendors of CAPM betas such as Merrill Lynch, Value Line, and Bloomberg
8		publish adjusted betas. The so-called Blume adjustment cited by Value Line adjusts
9		betas calculated using historical returns data to reflect the tendency of stock betas
10		to regress toward 1.0 over time, which means that the betas of typical low beta
11		stocks tend to increase toward 1.0, and the betas of typical high beta stocks tend to
12		decrease toward 1.0. <sup>25</sup>
13		The Blume adjustment procedure is:
14		Regressed Beta = $.67 * (Observed Beta) + 0.33$
15		For example, suppose a company has an observed past ß of 0.50. The regressed (Blume-
16		adjusted) beta would be:
17		Regressed Beta = $.67 * (0.50) + 0.33 = 0.67$
18		Blume offered two reasons for betas to regress toward 1.0. First, he suggested it may be a
19		by-product of management's efforts to keep the level of a firm's systematic risk close to
20		that of the market. He also speculated that it results from management's efforts to diversify
21		through investment projects.
22	Q.	GIVEN THIS DISCUSSION, WHAT BETAS ARE YOU USING IN YOUR CAPM?
23	A.	In the past, I have used Value Line betas exclusively. However, given the discussion above,
24		I am also using betas published by S&P Capital IQ. S&P Capital IQ computes betas over
25		a five-year period using monthly returns and the S&P 500 as the market return. S&P Capital

<sup>&</sup>lt;sup>25</sup> M. Blume, *On the Assessment of Risk*, J. OF FIN. (Mar. 1971).

IQ does not use the Blume adjustment, but I have included that adjustment in my analysis.
 As shown on page 3 of Exhibit JRW-6, I have averaged the *Value Line* betas and my adjusted S&P Capital IQ for the proxy groups. The median betas for the Electric and Bulkley Proxy Groups are 0.76 and 0.74.

5

#### Q. PLEASE DISCUSS THE MARKET RISK PREMIUM.

6 A. The market risk premium is equal to the expected return on the stock market (e.g., the 7 expected return on the S&P 500,  $E(R_m)$  minus the risk-free rate of interest  $(R_f)$ ). The market 8 risk premium is the difference in the expected total return between investing in equities 9 and investing in "safe" fixed-income assets, such as long-term government bonds. 10 However, while the market risk premium is easy to define conceptually, it is difficult to 11 measure because it requires an estimate of the expected return on the market— $E(R_m)$ . As 12 I discuss below, there are different ways to measure  $E(R_m)$ , and studies have come up with 13 significantly different magnitudes for  $E(R_m)$ . As Merton Miller, the 1990 Nobel Prize 14 winner in economics, indicated,  $E(R_m)$  is very difficult to measure and is one of the great 15 mysteries in finance.<sup>26</sup>

#### 16

17

Q.

#### PLEASE DISCUSS THE ALTERNATIVE APPROACHES TO ESTIMATING THE MARKET RISK PREMIUM.

A. Page 4 of Exhibit JRW-6 highlights the primary approaches to, and issues in, estimating
the expected market risk premium. The traditional way to measure the market risk premium
was to use the difference between historical average stock and bond returns. In this case,
historical stock and bond returns, also called *ex post* returns, were used as the measures of

<sup>&</sup>lt;sup>26</sup> Merton Miller, *The History of Finance: An Eyewitness Account*, J. APPLIED CORP. FIN., 3 (2000).

1 the market's expected return (known as the *ex ante* or forward-looking expected return). 2 This type of historical evaluation of stock and bond returns is often called the "Ibbotson 3 approach" after Professor Roger Ibbotson, who popularized this method of using historical 4 financial market returns as measures of expected returns. However, this historical 5 evaluation of returns can be a problem because: (1) ex post returns are not the same as ex 6 ante expectations; (2) market risk premiums can change over time, increasing when 7 investors become more risk-averse and decreasing when investors become less risk-averse; 8 and (3) market conditions can change such that *ex post* historical returns are poor estimates 9 of ex ante expectations.

10 The use of historical returns as market expectations has been criticized in numerous 11 academic studies, which I discuss later. The general theme of these studies is that the large 12 equity risk premium discovered in historical stock and bond returns cannot be justified by 13 the fundamental data. These studies, which fall under the category "ex ante models and 14 market data," compute ex ante expected returns using market data to arrive at an expected equity risk premium. These studies have also been called "puzzle research" after the 15 famous study by Mehra and Prescott in which the authors first questioned the magnitude 16 17 of historical equity risk premiums relative to fundamentals.<sup>27</sup>

18 In addition, there are several surveys of financial professionals regarding the market 19 risk premium, as well as several published surveys of academics on the equity risk 20 premium. Duke University has published a CFO Survey on a quarterly basis for over 10 21 years.<sup>28</sup> Questions regarding expected stock and bond returns are also included in the

<sup>&</sup>lt;sup>27</sup> Rajnish Mehra & Edward C. Prescott, *The Equity Premium: A Puzzle*, J. MONETARY ECON. 145 (1985).

<sup>&</sup>lt;sup>28</sup> *The CFO Survey*, DUKE UNIVERSITY, https://www.richmondfed.org/cfosurvey.

Federal Reserve Bank of Philadelphia's annual survey of financial forecasters, which is published as the *Survey of Professional Forecasters*.<sup>29</sup> This survey of professional economists has been published for almost 50 years. In addition, Pablo Fernandez conducts annual surveys of financial analysts and companies regarding the equity risk premiums used in their investment and financial decision making.<sup>30</sup>

# 6 Q. PLEASE HIGHLIGHT THE RESULTS OF THE ACADEMIC AND 7 PROFESSIONAL STUDIES DISCUSSING THE MARKET RISK PREMIUM.

8 A. Derrig and Orr, Fernandez, and Song completed the most comprehensive reviews of the research on the market risk premium.<sup>31</sup> Derrig and Orr's study evaluated the various 9 10 approaches to estimating market risk premiums, discussed the issues with the alternative 11 approaches, and summarized the findings of the published research on the market risk premium. Fernandez examined four alternative measures of the market risk premium — 12 13 historical, expected, required, and implied. He also reviewed the major studies of the 14 market risk premium and presented the summary market risk premium results. Song provided an annotated bibliography and highlighted the alternative approaches to 15 16 estimating the market risk premium.

<sup>&</sup>lt;sup>29</sup> Survey of Professional Forecasters, FEDERAL RESERVE BANK OF PHILADELPHIA (March 26, 2025). https://www.richmondfed.org/research/national\_economy/cfo\_survey/data\_and\_results/2025/20250326\_data\_a nd\_resultsThe Survey of Professional Forecasters was formerly conducted by the American Statistical Association (ASA) and the National Bureau of Economic Research (NBER) and was known as the ASA/NBER survey. The survey, which began in 1968, is conducted each quarter. The Federal Reserve Bank of Philadelphia, in cooperation with the NBER, assumed responsibility for the survey in June 1990.

<sup>&</sup>lt;sup>30</sup> Pablo Fernandez, Teresa Garcia, and Pablo Acín, SURVEY: MARKET RISK PREMIUM AND RISK-FREE RATE USED FOR 80 COUNTRIES IN 2025, IESE BUSINESS SCHOOL WORKING PAPER.

<sup>&</sup>lt;sup>31</sup> See Richard Derrig & Elisha Orr, Equity Risk Premium: Expectations Great and Small (Version 3.0), Aug. 28, 2003 (https://www.casact.org/sites/default/files/database/forum\_04wforum\_04wf001.pdf); Pablo Fernandez, EQUITY PREMIUM: HISTORICAL, EXPECTED, REQUIRED, AND IMPLIED, IESE BUSINESS SCHOOL WORKING PAPER (2007); ZHIYI SONG, THE EQUITY RISK PREMIUM: AN ANNOTATED BIBLIOGRAPHY (The CFA Institute Research (2007).

7	Q.	PLEASE HIGHLIGHT THE RESULTS OF THE MORE RECENT RISK
6		for over 30 studies, and the median market risk premium of these studies is 4.70%.
5		(4) the building blocks approach to the market risk premium. There are results reported
4		premium surveys of CFOs, financial forecasters, analysts, companies, and academics, and
3		of the historical risk premium, (2) ex ante market risk premium studies, (3) market risk
2		premium studies that I have reviewed. These include the results of: (1) the various studies
1		Page 5 of Exhibit JRW-6 provides a summary of the results of the market risk

8

### PREMIUM STUDIES AND SURVEYS.

9 A. The studies cited on page 5 of Exhibit JRW-6 include every market risk premium study 10 and survey I could identify that was published over the past 20 years and that provided a 11 market risk premium estimate. Many of these studies were published prior to the financial 12 crisis that began in 2008. In addition, some of these studies were published in the early 2000s at the market peak. It should be noted that many of these studies (as indicated) used 13 14 data over long periods of time (as long as 50 years of data) and so were not estimating a 15 market risk premium as of a specific point in time (e.g., the year 2001). To assess the effect 16 of the earlier studies on the market risk premium, I have reconstructed page 5 of Exhibit 17 JRW-6 on page 6 of Exhibit JRW-6; however, I have eliminated all studies dated before 18 January 2, 2010. The median market risk premium estimate for this subset of studies is 19 5.18%.

# 1Q.PLEASE SUMMARIZE THE MARKET RISK PREMIUM STUDIES AND2SURVEYS.

A. As noted above, there are three approaches to estimating the market risk premium—historic
stock and bond returns, *ex ante* or expected returns models, and surveys. The studies on
page 6 of Exhibit JRW-6 can be summarized in the following manners:

- Historic Stock and Bond Returns: Historic stock and bond returns suggest a market risk
   premium in the 4.40% to 7.00% range, depending on whether one uses arithmetic or
   geometric mean returns.
- 9 <u>Ex Ante Models</u>: Market risk-premium studies that use expected or *ex ante* return models
   10 indicate a market risk premium in the range of 2.83% to 5.50%.
- 11Surveys: Market risk premiums developed from surveys of analysts, companies, financial12professionals, and academics are lower, with a range from 3.00% to 5.70%.
- Building Block: The mean reported market risk premiums reported in studies using the
   building blocks approach range from 3.00% to 5.21%.

# Q. PLEASE HIGHLIGHT THE *EX ANTE* MARKET RISK PREMIUM STUDIES AND SURVEYS THAT YOU BELIEVE ARE THE MOST TIMELY AND RELEVANT.

- 18 A. I will highlight several studies and surveys.
- First, Pablo Fernandez conducts annual surveys of financial analysts and companies regarding the equity risk premiums used in their investment and financial decisionmaking.<sup>32</sup> His survey results are included in Exhibits JRW-6-5 and JRW-6-6. The results of his 2025 survey of academics, financial analysts, and companies indicate a mean market

<sup>&</sup>lt;sup>32</sup> Pablo Fernandez, Teresa Garcia, & Pablo Acín, Survey: Market Risk Premium and Risk-Free Rate Used for 56 Countries in 2025, IESE Business School Working Paper (May, 2025).

1	risk premium employed by U.S. analysts and companies of 5.5%. <sup>33</sup> His estimated market
2	risk premium for the U.S. has been in the 5.00% to 5.70% range in recent years.
3	Second, Professor Aswath Damodaran of New York University, a leading expert
4	on valuation and the market risk premium, provides a monthly updated market risk
5	premium based on projected S&P 500 EPS and stock-price level and long-term interest
6	rates. His estimated market risk premium has been in the range of 4.0% to 6.0% since 2010.
7	As shown in Figure 12 as of May 1, 2025, Damodaran's estimate of the equity risk premium
8	was 4.41%. <sup>34</sup>



Figure 12

Source: http://pages.stern.nyu.edu/~adamodar/.

9

11

Next, as explained previously, Kroll provides recommendations for the normalized 10 risk-free interest rate and market risk premiums to be used in calculating the cost of capital data. Its recommendations over 2008–2024 are shown in Exhibit JRW-6-7 and are also 12 depicted graphically in Figure 13 below. Over the past decade, Kroll's recommended

<sup>33</sup> *Id.* at 3.

<sup>34</sup> Aswath Damodaran, Damodaran Online, N.Y. Univ., http://pages.stern.nyu.edu/~adamodar/. (On August 12, 2023, Professor Damodaran appeared on CNBC to discuss the equity risk premium. See CNBC Television, Equity Risk Premium is Core to Understanding Long-Term Market Returns, says NYU Aswath Damodaran, YouTube https://www.youtube.com/watch?v=VPkQ7\_3Sf1E.

1	normalized risk-free interest rates have been in the 2.50% to 4.50% range and market risk
2	premiums have been in the 5.0% to 6.0% range. Most recently, Kroll reduced its market
3	risk premium from 6.00% to 5.50% on June 8, 2023, and to 5.00% on June 5, 2024. <sup>35</sup> On
4	April 15, 2025, citing an uncertainty in the global economy, Kroll increased their equity
5	risk premium estimate to $5.50\%$ . <sup>36</sup>



Source:https://www.kroll.com/en/insights/publications/cost-of-capital/recommended-us-equity-risk-premium-and-corresponding-risk-free-rates.

6	Fourth, Dr. David Kelly, the Chief Global Strategist at J.P. Morgan Asset
7	Management, is one of the best-known market strategists on Wall Street. His annual
8	publication and their monthly updates, the JP Morgan Guide to the Markets, is a must-read
9	guide for stockbrokers and financial professionals. In presenting their annual expectations
10	for the markets, JP Morgan provides details about inputs and assumptions of expected

<sup>&</sup>lt;sup>35</sup> https://www.kroll.com/en/insights/publications/cost-of-capital/recommended-us-equity-risk-premium-andcorresponding-risk-free-rates.pdf.

<sup>&</sup>lt;sup>36</sup> Kroll, "Cost of Capital Inputs Updated to Reflect Heightened Uncertainty in Global Economy," April 15, 2025. https://kroll.com/jssmedia/cost-of-capital/kroll-cost-of-capital-inputs-updated-to-reflect-heightened-uncertaintyin-global-economy.pdf?\_ga=2.243564870.274093763.1745334856-494230604.1745334855.

market returns. In the 2025 update, JP Morgan detailed their 2025 expected long-term stock
 market return of 6.70%, bond yield of 3.80%, and resulting market risk premium of
 3.90%.<sup>37</sup>



Finally, KPMG, the international accounting firm, regularly publishes an update to
their market risk premium to be used in their valuation practice. KPMG's market risk
premium is shown in Figure 13, which was as high as 6.75% in 2020, and was lowered to
as low as 5.00% on September 30, 2021. KPMG increased its market risk premium to
6.00% on June 30, 2022, but lowered it to 5.75% on December 31, 2022, to 5.50% on
March 31, 2023, to 5.25% on June 30, 2023, and to 5.00% on September 30, 2023.<sup>38</sup>

### 12 Q. GIVEN THESE RESULTS, WHAT MARKET RISK PREMIUM ARE YOU USING

13

4 5

#### IN YOUR CAPM?

A. The studies in Exhibit JRW-6-6 and, more importantly, the more timely and relevant
 studies cited in the previous section, suggest that the appropriate market risk premium in

<sup>&</sup>lt;sup>37</sup> JP Morgan, 2025 Long-Term Capital Market Assumptions, 2025.

<sup>&</sup>lt;sup>38</sup> KPMG Corporate Finance & Valuations NL Recommends A MRP of 5.0% as per March 31, 2024, KMPG (Mar. 31, 2024). https://indialogue.io/clients/reports/public/5d9da61986db2894649a7ef2/5d9da 63386db2894649a7ef5.
1		the U.S. is in the 4.0% to 6.0%	% range. I giv	ve the most w	veight to the mar	ket risk-premium
2		estimates of Kroll (5.50%), KF	PMG (5.00%)	, JP Morgan	(3.90%), Damoda	aran (4.43%), and
3		the Fernandez (5.50%) and Du	uke-CFO surv	veys (5.20%)	. The average of	these approaches
4		is 4.92%. Given the recent rep	ported market	risk premiu	ms of Kroll, Fern	andez, and Duke-
5		CFO, I believe a market risk p	premium in th	e 5.0%-5.5%	is appropriate a	t this time. I will
6		use the midpoint of this range,	, 5.25%, as m	y CAPM ma	rket risk premiur	n.
7	Q.	WHAT EQUITY COST RA	TE IS INDI	CATED BY	YOUR CAPM A	ANALYSIS?
8	A.	The results of my CAPM stud	ly for the pro-	xy group are	summarized on ]	page 1 of Exhibit
9		JRW-6 and in Table 8.				
10 11 12		CAPM-d K =	Table lerived Equit ( <i>R<sub>f</sub></i> ) + ß * [	8 ty Cost Rate <i>E</i> ( <i>R<sub>m</sub></i> ) - ( <i>R<sub>f</sub></i> )	/ROE	
			Risk-Free Rate	Beta	Equity Risk Premium	Equity Cost Rate
		Electric Proxy Group	5.0%	0.76	5.25%	9.00%
10		Electric Proxy Group Bulkley Proxy Group	5.0% 5.0%	0.76 0.74	5.25% 5.25%	9.00% 8.85%
13 14		Electric Proxy Group Bulkley Proxy Group For the Electric Proxy	<b>5.0%</b> <b>5.0%</b> Group, the ris	0.76 0.74 sk-free rate o	5.25%           5.25%           f 5.0% plus the p	9.00%           8.85%           roduct of the beta
13 14 15		Electric Proxy Group Bulkley Proxy Group For the Electric Proxy of 0.76 times the equity risk pr	5.0% 5.0% Group, the ris	<b>0.76</b> <b>0.74</b> sk-free rate o 25% results in	5.25%           5.25%           f 5.0% plus the p           n a 9.00% equity	9.00% 8.85% roduct of the beta cost rate. For the
13 14 15 16		Electric Proxy Group Bulkley Proxy Group For the Electric Proxy of 0.76 times the equity risk pr Bulkley Proxy Group, the risk	5.0% 5.0% Group, the ris remium of 5.2 -free rate of 5	0.76 0.74 sk-free rate o 25% results in 5.0% plus the	5.25% 5.25% f 5.0% plus the p n a 9.00% equity e product of the β	9.00% 8.85% roduct of the beta cost rate. For the of 0.74 times the
13 14 15 16 17		Electric Proxy Group Bulkley Proxy Group For the Electric Proxy of 0.76 times the equity risk pr Bulkley Proxy Group, the risk equity risk premium of 5.25%	5.0% 5.0% Group, the rist remium of 5.2 -free rate of 5 results in an	0.76 0.74 sk-free rate o 25% results in 5.0% plus the 8.85% equity	5.25% 5.25% f 5.0% plus the p n a 9.00% equity e product of the β y cost rate.	9.00% 8.85% roduct of the beta cost rate. For the of 0.74 times the
13 14 15 16 17		Electric Proxy Group Bulkley Proxy Group For the Electric Proxy of 0.76 times the equity risk pr Bulkley Proxy Group, the risk equity risk premium of 5.25% D.	5.0% 5.0% Group, the rist remium of 5.2 -free rate of 5 results in an Equity Cost	0.76 0.74 sk-free rate o 25% results in 5.0% plus the 8.85% equity Rate Summ	5.25% 5.25% f 5.0% plus the p n a 9.00% equity e product of the ß y cost rate.	9.00% 8.85% roduct of the beta cost rate. For the of 0.74 times the
13 14 15 16 17 18		Electric Proxy Group Bulkley Proxy Group For the Electric Proxy of 0.76 times the equity risk pr Bulkley Proxy Group, the risk equity risk premium of 5.25% D.	5.0% 5.0% Group, the rist remium of 5.2 -free rate of 5 results in an Equity Cost	0.76 0.74 sk-free rate o 25% results in 5.0% plus the 8.85% equity Rate Summ	5.25% 5.25% f 5.0% plus the p n a 9.00% equity e product of the β y cost rate.	9.00% 8.85% roduct of the beta cost rate. For the of 0.74 times the
13 14 15 16 17 18 19	Q.	Electric Proxy Group Bulkley Proxy Group For the Electric Proxy of 0.76 times the equity risk pr Bulkley Proxy Group, the risk equity risk premium of 5.25% D. PLEASE SUMMARIZE T	5.0% 5.0% Group, the rist remium of 5.2 -free rate of 5 results in an Equity Cost	0.76 0.74 sk-free rate o 25% results in 5.0% plus the 8.85% equity Rate Summ	5.25% 5.25% f 5.0% plus the p n a 9.00% equity e product of the ß y cost rate. ary OUR EQUITY	9.00% 8.85% roduct of the beta cost rate. For the of 0.74 times the
<ol> <li>13</li> <li>14</li> <li>15</li> <li>16</li> <li>17</li> <li>18</li> <li>19</li> <li>20</li> </ol>	Q.	Electric Proxy Group Bulkley Proxy Group For the Electric Proxy of 0.76 times the equity risk pr Bulkley Proxy Group, the risk equity risk premium of 5.25% D. PLEASE SUMMARIZE T STUDIES.	5.0% 5.0% Group, the rist remium of 5.2 -free rate of 5 results in an Equity Cost	0.76 0.74 Sk-free rate o 25% results in 5.0% plus the 8.85% equity Rate Summ	5.25% 5.25% f 5.0% plus the p n a 9.00% equity e product of the ß y cost rate. ary OUR EQUITY	9.00% 8.85% roduct of the beta cost rate. For the of 0.74 times the

Table 9
<b>ROEs Derived from DCF and CAPM Models</b>

12

	DCF	CAPM
Electric Proxy Group	9.80%	9.00%
Bulkley Proxy Group	9.60%	8.85%

### 3 Q. GIVEN THESE RESULTS, WHAT IS YOUR ESTIMATED EQUITY COST RATE 4 FOR THE GROUPS?

5 Given these results, I conclude that the appropriate equity cost rate for companies in the A. 6 Electric and Bulkley Proxy Groups is in the 8.85% to 9.80% range. Given that: (1) I rely 7 primarily on the DCF model and the results for the Electric Proxy Group; (2) I have 8 recommended a capital structure with a higher common equity ratio and lower financial 9 risk than the two proxy groups; (3) the Companies' investment risk is a little below the 10 average of the proxy groups; and (4) the recent market volatility and increase in interest 11 rates, I am using a ROE of 9.50% for the Companies. Despite EKC's investment risk and 12 my recommended common equity ratio, I have employed a ROE above the midpoint of the 13 8.85%-9.80% range (9.30%) due to factor (4) the rise in market volatility and interest rates. 14 **Q**. PLEASE INDICATE WHY AN EQUITY COST RATE OF 9.50% IS 15 **APPROPRIATE FOR THE COMPANIES.** 16 A. A number of reasons support an equity cost rate of 9.50% as appropriate and fair for the 17 Companies: 18 1. The Companies' proposed capital structures have more common equity and less 19 financial risk than the companies in the proxy groups. 2. 20 The investment risk of the Companies is a little below the average of the proxy

21 groups. The S&P and Moody's credit ratings of BBB+ and Baa1 for EKC are a

1		little better than the averages of the proxy groups, which are BBB+ and Baa2.
2		3. As Table 6 (page 37) shows, the electric utility industry is among the lowest risk
3		industries in the U.S. as measured by beta. As such, according to CAPM, the cost
4		of equity capital for this industry is among the lowest in the U.S.
5		4. On an annual basis, the average authorized ROEs for electric utility companies have
6		been 9.54% in 2022, and 9.60% in 2023, 9.70% in 2024, and 9.72% in the first
7		quarter of 2025, according to Regulatory Research Associates. <sup>39</sup> As I discuss above,
8		authorized ROEs have lagged behind capital market cost rates. This observation is
9		supported by the Werner and Jarvis (2022) study which evaluated over 3,500
10		authorized ROEs over the past four decades and concluded that authorized ROEs
11		did not decline in line with capital costs and therefore past authorized ROEs have
12		overstated the actual cost of equity capital. Accordingly, I believe my
13		recommended ROE reflects the current capital market environment.
14	Q.	DOES YOUR 9.50% ROE RECOMMENDATION MEET THE HOPE AND
15		BLUEFIELD STANDARDS?
16	A.	Yes. As I previously noted, according to the Hope and Bluefield decisions, returns on
17		capital should be: (1) comparable to returns investors expect to earn on other investments
10		

A. Yes. As I previously noted, according to the *Hope* and *Bluefield* decisions, returns on capital should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and (3) adequate to maintain and support the company's credit and to attract capital. As page 3 of Exhibit JRW-2 shows, electric utility companies have been earning in the 8.0% to 10.0% range in recent years, they have investment-grade bond ratings, and their stocks sell well

<sup>&</sup>lt;sup>39</sup> S&P Global Market Intelligence, *RRA Regulatory Focus* (2025).

1		above their book values. While my recommendation is below the average authorized ROEs
2		for electric utility companies, it reflects the downward trend in authorized and earned ROEs
3		of utilities.
4		
		VII. <u>CRITIQUE OF THE COMPANIES' RATE OF RETURN TESTIMONY</u>
5 6 7	Q.	PLEASE SUMMARIZE THE COMPANIES' COST OF CAPITAL
8		RECOMMENDATION.
9	А.	Mr. Ley has proposed capital structures consisting of 48.03% long-term debt and 51.97%
10		equity for EKC. Mr. Ley has proposed a long-term debt cost rate of 4.641% for EKC. Ms.
11		Bulkley proposes a ROE of 10.50% for the Companies. Based on these components, Mr.
12		Ley has proposed an overall rate of return or cost of capital of 7.69% for EKC. These
13		recommendations are summarized on page 1 of Exhibit JRW-7.
14	Q.	WHAT ARE THE AREAS OF DISAGREEMENT IN ESTIMATING THE RATE
15		OF RETURN OR COST OF CAPITAL IN THIS PROCEEDING?
16	A.	As I discuss above, the primary issues related to the Companies' rate of return include the
17		following: (1) capital market conditions; (2) the capital structure; (3) the Companies'
18		investment risk, (4) DCF Approach; (5) CAPM Approach; (6) the alternative risk premium
19		model; and (7) business and regulatory risks.
20		The capital market conditions, capital structure, and the Companies' investment
21		risk were previously discussed. I address the remaining items below.

### Q. PLEASE REVIEW MS. BULKLEY'S EQUITY COST RATE APPROACHES AND RESULTS.

A. Ms. Bulkley developed a proxy group of electric utilities and employed DCF, CAPM, and an
alternative risk premium model as her equity cost rate approaches. Ms. Bulkley's equity
cost rate estimates for the Companies are summarized on page 2 of Exhibit JRW-7. Based
on these figures, Ms. Bulkley concludes that the appropriate equity cost rate is 10.50% for
the Companies' electric utility operations.

8

9

### A. DCF Approach

### 10 Q. PLEASE SUMMARIZE MS. BULKLEY'S DCF ESTIMATES.

11 On pages 36-42 of her testimony and in Exhibit AEB-3, Ms. Bulkley develops an equity cost A. 12 rate by applying the DCF model to her proxy group. Ms. Bulkley's DCF results are 13 summarized on page 2 of Exhibit JRW-7. In the traditional DCF approach, the equity cost 14 rate is the sum of the dividend yield and expected growth. Ms. Bulkley uses three dividend 15 yield measures (30, 90, and 180 days) in the DCF models conducted. In the constant-16 growth DCF models, Ms. Bulkley has relied on the forecasted EPS growth rates of Zacks, 17 Yahoo Finance, and Value Line. Ms. Bulkley's mean and median DCF ROEs, using 18 average growth rates, range from 9.56% to 9.80%.

### 19 Q. WHAT ARE THE ISSUES IN MS. BULKLEY'S DCF ANALYSES?

A. The primary issues in Ms. Bulkley's DCF analyses are: (1) exclusively using the overly
 optimistic and upwardly biased EPS growth rate forecasts of Wall Street analysts and *Value Line*; and (2) claiming that the DCF results underestimate the market-determined cost of
 equity capital due to high utility stock valuations and low dividend yields.

### 1. <u>Analysts' EPS Growth Rate Forecasts</u>

# 1 Q. PLEASE DISCUSS MS. BULKLEY'S EXCLUSIVE RELIANCE ON THE 2 PROJECTED GROWTH RATES OF WALL STREET ANALYSTS AND VALUE 3 LINE.

A. Ms. Bulkley's exclusive reliance on the projected growth rates published by Wall Street
analysts and *Value Line* inflates her estimates of growth rates. It seems highly unlikely
that investors today would rely exclusively on the EPS growth-rate forecasts of Wall Street
analysts and *Value Line* and ignore other growth-rate measures in arriving at their expected
growth rates for equity investments.

9 As I previously stated, the appropriate growth rate in the DCF model is the dividend 10 growth rate rather than the earnings growth rate. Hence, consideration must be given to 11 other indicators of growth, including historical prospective dividend growth, internal 12 growth, as well as projected earnings growth.

13 In addition, I have provided evidence that analysts' EPS growth rate projections are 14 overly optimistic and upwardly biased. I have provided a discussion of this issue on pages 15 47-50 of this testimony and report on a study I conducted in Figure 11. Using the electric 16 utilities and gas distribution companies covered by Value Line, this study demonstrates that 17 the mean forecasted EPS growth rates are consistently greater than the achieved actual EPS 18 growth rates over the 1985-2022 time period. Over the entire period, the mean forecasted 19 EPS growth rate is over 200 basis points above the actual EPS growth rate. As such, the 20 projected EPS growth rates for utilities are overly optimistic and upwardly based. Hence, 21 exclusively using these growth rates as a DCF growth rate produces an overstated equity-

1		cost rate. In addition, I also highlighted a study by Szakmary, Conover, and Lancaster
2		(2008) who evaluated the accuracy of Value Line's three-to-five-year EPS growth rate
3		forecasts using companies in the Dow Jones Industrial Average over a thirty-year time
4		period and found these forecasted EPS growth rates to be significantly higher than the EPS
5		growth rates that these companies subsequently achieved. <sup>40</sup>
6		
_		B. CAPM Approach
7	0	DI FACE DISCUSS MS DUI VI EV/S CADM
ð	Q.	PLEASE DISCUSS MS. BULKLEY'S CAPM.
9	A.	On pages 24-8 of her testimony and in Exhibit No. AEB-3, Ms. Bulkley develops an equity
10		cost rate by applying the CAPM model to her proxy group. Ms. Bulkley develops an equity
11		cost rate by using not only the traditional CAPM, but also the so-called Empirical CAPM
12		("ECAPM") model for her proxy group. Ms. Bulkley's CAPM/ECAPM results are
13		summarized on page 2 of Exhibit JRW-7. The ECAPM is a variant of the traditional CAPM.
14		The CAPM/ECAPM approach requires an estimate of the risk-free interest rate, Beta, and
15		the equity risk premium. Ms. Bulkley uses: (1) current (4.52%), near-term projected
16		(4.42%), and long-term projected (4.30%) 30-year Treasury yields; (2) betas from Value Line
17		and Bloomberg; and (3) a market risk premium of 7.54%. Based on these figures, Ms.
18		Bulkley finds CAPM/ECAPM equity cost rates ranging from 10.15% to 11.62%.
19	Q.	WHAT ARE THE ERRORS IN MS. BULKLEY'S CAPM ANALYSIS?
20	A.	The primary errors with Ms. Bulkley's CAPM/ECAPM analyses are: (1) the use of the
21		ECAPM version of the CAPM and (2) the expected market risk premium of 7.54%.

<sup>&</sup>lt;sup>40</sup> Szakmary, A., Conover, C., & Lancaster, C., *An Examination of* Value Line's *Long-Term Projections*, J. BANKING & FIN., May 2008, at 820–33.

### 1. The Validity of the ECAPM Approach

### 1 Q. WHAT ISSUES DO YOU HAVE WITH MS. BULKLEY'S USE OF THE ECAPM?

2 A. ECAPM, as popularized by rate of return consultant Dr. Roger Morin, attempts to model 3 the well-known finding of tests of the CAPM that have indicated the Security Market Line 4 (SML) is not as steep as predicted by CAPM. Accordingly, ECAPM is an alternative 5 version of the CAPM. However, the ECAPM has not been theoretically or empirically 6 validated in refereed journals. The ECAPM provides for weights that are used to adjust the 7 risk-free rate and market risk premium in applying ECAPM. Ms. Bulkley uses 0.25 and 0.75 8 factors to boost the equity risk premium measure but provides no empirical justification for 9 those figures.

Beyond the lack of any theoretical or empirical validation of ECAPM, there are two errors in Ms. Bulkley's version of ECAPM: (1) I am not aware of any tests of the CAPM that use adjusted betas such as those used by Ms. Bulkley; and (2) adjusted betas, which were previously discussed already, address the empirical issues with CAPM. Specifically, the beta adjustment (1) increases the beta and resulting expected return for low beta (beta<1.0) stocks, and (2) decreases the beta and resulting expected return for high beta (beta>1.0) stocks.

### 2. Overstated Market Risk Premium

### 17

# Q. PLEASE ASSESS MS. BULKLEY'S MARKET RISK PREMIUM DERIVED FROM APPLYING THE DCF MODEL TO THE S&P 500 USING VALUE LINE EPS GROWTH RATES.

A. The most blatant error in Ms. Bulkley's CAPM analysis is the magnitude of the market (or

1	equity) risk premium-which is then used to produce very high ROE results, as high as
2	11.32%. Ms. Bulkley develops an expected market risk premium by: (1) applying the DCF
3	model to the S&P 500 to get an expected market return; and (2) subtracting the risk-free rate
4	of interest. As shown in Table 10, Ms. Bulkley's estimated market return of 12.05% for the
5	S&P 500 equals the sum of the dividend yield of 1.76% and expected EPS growth rate of
6	10.51%. The expected EPS growth rate is the average of the expected EPS growth rates
7	from S&P. The primary error in this approach is Ms. Bulkley's expected DCF growth rate.
8	As previously discussed, the expected EPS growth rates of Wall Street analysts are
9	upwardly biased. In addition, as explained below, the projected growth rate is inconsistent
10	with actual economic and earnings growth rates in the U.S.

### 11 12

### Table 10 Bulkley CAPM Market Risk Premium

	S&P 500
Dividend Yield	1.46%
+ Expected EPS Growth	10.51%
= Expected Market Return	12.05%
+ Risk-Free Rate	4.52%
= Market Risk Premium	7.54%

13

### Q. PLEASE PROVIDE ADDITIONAL INSIGHTS INTO THE EXPECTED STOCK MARKET RETURN OF 12.05%.

3 Simply put, the assumption of a 12.05% expected stock market return is excessive and A. 4 unrealistic. According to Damodaran, the compounded annual return in the U.S. stock market between 1928 and 2024 was about 10% (9.80%).<sup>41</sup> Ms. Bulkley's CAPM results 5 6 assume that the return on the U.S. stock market will be about 20 percent higher in the future 7 than it has been in the past. The high expected stock market return, and the resulting market 8 risk premium and equity cost rate results are directly related to computing the expected 9 stock market return as the sum of the adjusted dividend yield plus the expected EPS growth 10 rate of 10.51%.

## Q. IS MS. BULKLEY'S EXPECTED STOCK MARKET RETURN OF 12.05% REFLECTIVE OF THE STOCK MARKET RETURNS THAT INVESTMENT FIRMS TELL INVESTORS TO EXPECT?

14 No. Many investment firms provide investors with their estimates of the annual stock A. returns that they should expect in the future. Most publish these expected returns in 15 16 documents entitled "Capital Market Assumptions" which are available at their websites. If 17 you google "Capital Market Assumptions," you get a long list of investment firms and their 18 base case expected annual return assumptions for stocks, bonds, and other financial assets. 19 In my search, I found thirty investment firms that published their capital market assumptions. These are listed in Exhibit JRW-8, and include many of the largest, best-20 21 known investment firms, including J.P. Morgan, BlackRock, BNY Mellon, Fidelity

<sup>&</sup>lt;sup>41</sup> Aswath Damodaran, *Damodaran Online*, N.Y. Univ., http://pages.stern.nyu.edu/~adamodar/.

1	Investments, Northern Trust, Vanguard Group, and State Street. Combined, these thirty
2	firms manage more than \$50 trillion in assets under management.
3	Figure 15 provides a histogram of the expected returns listed in Exhibit JRW-8.
4	The average duration of the long-term forecasts is 10 years. The range of the forecasted
5	U.S. annual large cap equity returns is 4.00% to 9.50%. The mean and standard deviation
6	of these expected returns are 6.87% and 1.28%.

7



Figure 15 Histogram of Investment Firm Expected Large Cap Equity Annual Returns 2023





### Q. WHAT ARE YOUR OBSERVATIONS ON THE STOCK MARKET RETURNS THAT INVESTMENT FIRMS TELL INVESTORS TO EXPECT?

A. I have three comments: (1) These returns are below the historical average compounded annual stock market return of 9.64% cited above (more on this below); (2) the standard deviation of 1.28% is very low, which indicates that the expected returns provided by these firms are quite similar, especially compared to historical stock market returns; and (3) these expected returns indicate Ms. Bulkley's average expected stock market return of 12.05% is almost double the average annual return investment firms tell investors they should expect.

## Q. WHY DO YOU THINK THE STOCK MARKET RETURNS THAT INVESTMENT FIRMS TELL INVESTORS TO EXPECT ARE LOWER THAN HISTORICAL STOCK RETURNS?

A. The biggest factor is that the valuation of the overall stock market is high relative to
historical standards. When stock prices are high, investors have to pay higher prices to buy
in, which lowers their future expected returns. Figure 16 provides Schiller's cyclicallyadjusted PE ratio (CAPE) over the last 100+ years.<sup>42</sup> Stocks prices have remained above
the mean historical CAPE level of 17.02% since 2009, with a current level of 28.80. Hence,
the higher valuation of the stock market leads to lower expected returns.





11 12 13

### 14 Q. HOW DO ISSUES WITH ANALYSTS' EPS GROWTH RATE FORECASTS

### 15 **IMPACT MS. BULKLEY'S CAPM?**

16 A. The key point is that Ms. Bulkley's CAPM market risk premium methodology is based

The Schiller S&P 500 CAPE ratio is based on average inflation-adjusted earnings from the previous 10 years. Data Source: https://www.multpl.com/shiller-pe.

<sup>&</sup>lt;sup>42</sup> The S&P 500 Shiller CAPE Ratio is defined as the ratio the S&P 500's current price divided by the 10-year moving average of inflation-adjusted earnings. The metric was developed by economist Robert Shiller and is used to understand the valuation of the stock market. A higher (lower) CAPE ratio suggests lower (higher) returns in the future.

entirely on the concept that analyst projections of companies' three-to-five-year EPS 1 2 growth rates reflects investors' expected *long-term* EPS growth for those companies. 3 However, this assumption is highly unrealistic given the published research on these projections. As previously noted, numerous studies have shown that the long-term EPS 4 5 growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased.<sup>43</sup> Moreover, as I discuss above, the Lacina, Lee, and Xu study showed that analysts' 6 7 forecasts of EPS growth over the next three-to-five years are no more accurate than their 8 forecasts of the next single year's EPS growth (and the single year forecasts are notoriously 9 inaccurate). The overly optimistic inaccuracy of analysts' growth rate forecasts leads to an upward bias in equity cost estimates estimated at about 300 basis points.<sup>44</sup> 10

I have also completed studies on the accuracy of analysts' projected EPS growth rates. In Figure 11 (page 49), I demonstrated that the EPS growth rate forecasts of Wall Street analysts are upwardly biased for electric utilities and gas distribution companies. In Figure 17, I provide the results of a study I performed using all companies followed by I/B/E/S who have three-to-five-year EPS growth rate forecasts over the 1985–2022 time period.

17

18

In this study, for each company with a three-to-five-year forecast, I compared the average three-to-five-year average EPS growth rate forecasts to the actual EPS growth rates

<sup>&</sup>lt;sup>43</sup> Such studies include: R.D. Harris, *The Accuracy, Bias, and Efficiency of Analysts' Long Run Earnings Growth Forecasts, J. of Business Fin. & Accounting,* 725–55 (June/July 1999); P. DeChow, A. Hutton, and R. Sloan, *The Relation Between Analysts' Forecasts of Long-Term Earnings Growth and Stock Price Performance Following Equity Offerings,* Contemporary Accounting Research (2000); K. Chan, L., Karceski, J., & Lakonishok, J., *The Level and Persistence of Growth Rates, J. of Fin.* 643–84 (2003); 8 Michael Lacina, B. Brian Lee, and Zhao Xu, *Advances in Business and Management Forecasting,* at 77–101 (Kenneth D. Lawrence, Ronald K. Klimberg, eds., Emerald Grp. Publ'g Ltd. 2011).

<sup>&</sup>lt;sup>44</sup> Peter D. Easton & Gregory A. Sommers, *Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts*, 45 J. of Accounting Research, 983–1015 (2007).

1	achieved over the three-to-five-year time period. In Figure 17, the mean of the projected
2	EPS growth rates is the red line and the mean of the actual EPS growth rates is the blue
3	line. Over the thirty-five years of the study, the mean projected three-to-five-year EPS
4	growth rate was 12.50%, while the average actual achieved three-to-five-year EPS growth
5	rate was 6.50%. This study demonstrates that the projected three-to-five-year EPS growth
6	rate forecasts are upwardly biased and overly optimistic. As can be seen by comparing
7	Figures 11 and 17, the degree of upward bias for all companies is much larger than it is for
8	electric and gas utility companies.



### 15 Q. HAVE CHANGES IN REGULATIONS IMPACTING WALL STREET ANALYSTS

### 16 AND THEIR RESEARCH IMPACTED THE UPWARD BIAS IN THEIR THREE-

17 **TO-FIVE YEAR EPS GROWTH-RATE FORECASTS?** 

A. No. A number of the studies I have cited here demonstrate that the upward bias has
 continued, despite changes in regulations and reporting requirements over the past two
 decades. This observation is highlighted by a 2010 McKinsey study entitled "Equity

1	Analysts: Still Too Bullish," which involved a study of the accuracy of analysts' long-term,
2	EPS-growth-rate forecasts. The authors conclude that after a decade of stricter regulation,
3	analysts' long-term earnings forecasts continue to be excessively optimistic. They made
4	the following observation:
5	Alas, a recently completed update of our work only reinforces this view—
6	despite a series of rules and regulations, dating to the last decade, that were
7	intended to improve the quality of the analysts' long-term earnings
8	forecasts, restore investor confidence in them, and prevent conflicts of
9	interest. For executives, many of whom go to great lengths to satisfy Wall
10	Street's expectations in their financial reporting and long-term strategic
11	moves, this is a cautionary tale worth remembering. This pattern confirms
12	our earlier findings that analysts typically lag behind events in revising their
13	forecasts to reflect new economic conditions. When economic growth
14	accelerates, the size of the forecast error declines; when economic growth
15	slows, it increases. So as economic growth cycles up and down, the actual
16	earnings S&P 500 companies report occasionally coincide with the
17	analysts' forecasts, as they did, for example, in 1988, from 1994 to 1997,
18	and from 2003 to 2006. Moreover, analysts have been persistently
19	overoptimistic for the past 25 years, with estimates ranging from 10 to 12
20	percent a year, compared with actual earnings growth of 6 percent. Over
21	this time frame, actual earnings growth surpassed forecasts in only two
22	instances, both during the earnings recovery following a recession. On
23	average, analysts' forecasts have been almost 100 percent too high. <sup>45</sup>
24	(Emphasis Added).

This is the same observation made in a *Bloomberg Businessweek* article. The author concluded:

The bottom line: Despite reforms intended to improve Wall Street
 research, stock analysts seem to be promoting an overly rosy view of
 profit prospects. 46

<sup>&</sup>lt;sup>45</sup> Marc H. Goedhart, Rishi Raj, and Abhishek Saxena, "Equity Analysts, Still Too Bullish," *McKinsey on Finance*, pp. 14-17, (Spring 2010) (emphasis added).

<sup>&</sup>lt;sup>46</sup> Roben Farzad, "For Analysts, Things Are Always Looking Up," *Bloomberg Businessweek* (June 10, 2010), https://www.bloomberg.com/news/articles/2010-06-10/for-analysts-things-are-always-looking-up.

## 1Q.IS MS. BULKLEY'S MARKET RISK PREMIUM OF 7.54% REFLECTIVE OF2THE MARKET RISK PREMIUMS FOUND IN PUBLISHED STUDIES AND3SURVEYS?

4 No. This figure is well in excess of market risk premiums: (1) found in studies of the market A. 5 risk premium by leading academic scholars, (2) produced by analyses of historic stock and 6 bond returns, and (3) found in surveys of financial professionals. Page 6 of Exhibit JRW-6 provides the results of over 30 market risk premium studies from the past 15 years.<sup>47</sup> 7 8 Historic stock and bond returns suggest a market risk premium in the 4.40%–6.64% range, 9 depending on whether one uses arithmetic or geometric mean returns. There have been 10 many studies using expected return (also called *ex ante*) models, and their market risk 11 premiums results vary from as low as 3.32% to as high as 6.0%. Finally, the market risk 12 premiums developed from surveys of analysts, companies, financial professionals, and 13 academics suggest even potentially lower market risk premiums, in a range from 3.15% to 14 5.70%. The bottom line is that there is no support in historic return data, surveys, academic 15 studies, or reports for investment firms for a market risk premium as high as 7.54% used 16 by Ms. Bulkley.

## 17 Q. IS THERE OTHER EVIDENCE THAT INDICATES THAT MS. BULKLEY'S 18 MARKET RISK PREMIUM IS EXCESSIVE?

A. Yes. A long-term EPS growth rate of 10.51% is inconsistent with both historic and
 projected economic and earnings growth in the U.S. for several reasons: (1) long-term EPS
 and economic growth is about one-half of Ms. Bulkley's projected EPS growth rate of

<sup>&</sup>lt;sup>47</sup> See Woolridge, Exh. JRW-6 at 6.

<u>5.81%</u> 6.69%

1	10.51%; (2) long-term EPS and GDP growth are directly linked; and (3) more recent trends
2	in GDP growth, as well as projections of GDP growth, suggest slower economic and
3	earnings growth in the near future, during the period when the rates from this case will be
4	effective.
5	Long-Term Historic EPS and GDP Growth Have Been in the 6%-7% Range: In
5 6	Long-Term Historic EPS and GDP Growth Have Been in the 6%–7% Range: In Exhibit JRW-9, I performed a study of the growth in nominal GDP, S&P 500 stock price
5 6 7	Long-Term Historic EPS and GDP Growth Have Been in the 6%–7% Range: In Exhibit JRW-9, I performed a study of the growth in nominal GDP, S&P 500 stock price appreciation, and S&P 500 EPS and DPS growth since 1960. The results are provided on

Table 11 GDP, S&P 500 Stock Price, EPS 1960-Present	S, and DPS Growth
Nominal GDP	6.43%
S&P 500 Stock Price	7.48%
S&P 500 EPS	7.05%

S&P 500 DPS

Average

12	Average	0.0970
13		
14	The results show that the historical long-r	run growth rates for GDP, S&P EPS, and
15	S&P DPS are in the 6% to 7% range. By compar	ison, Ms. Bulkley's long-run growth rate
16	projection of 10.51% is, at best, overstated. This	estimate suggests that companies in the
17	U.S. would be expected to: (1) increase their group	wth rate of EPS by almost 100 percent in
18	the future and (2) maintain that growth indefinite	y in an economy that is expected to grow
19	at about one-third of Ms. Bulkley's projected gro	wth rates.

### 20There is a Direct Link Between Long-Term EPS and GDP Growth:The results in21Exhibit JRW-9 and Table 11 show that historically there has been a close link between

9 10 11

<sup>&</sup>lt;sup>48</sup> See Woolridge, Exh. JRW-8 at 1.

1 long-term EPS and GDP growth rates. Brad Cornell of the California Institute of 2 Technology published a study on GDP growth, earnings growth, and equity returns. Mr. 3 Cornell finds that long-term EPS growth in the U.S. is directly related to GDP growth, with 4 GDP growth providing an upward limit on EPS growth. In addition, the study finds that 5 long-term stock returns are determined by long-term earnings growth. Cornell concludes with the following observations:<sup>49</sup> 6 7 The long-run performance of equity investments is fundamentally linked to 8 growth in earnings. Earnings growth, in turn, depends on growth in real 9 GDP. This article demonstrates that both theoretical research and empirical 10 research in development economics suggest relatively strict limits on future 11 growth. In particular, real GDP growth in excess of 3 percent in the long 12 run is highly unlikely in the developed world. In light of ongoing dilution 13 in earnings per share, this finding implies that investors should anticipate 14 real returns on U.S. common stocks to average no more than about 4-5 15 percent in real terms. 16 Annual Growth rates in nominal GDP are shown on page 2 of Exhibit JRW-9. 17 Nominal GDP growth was in the four percent range over the past decade until the COVID-18 19 Pandemic hit in 2020. Nominal GDP fell by 2.2% in 2020, before rebounding and growing by over 10.0% in 2021 and in 2022. The components of nominal GDP growth are 19 20 real GDP growth and inflation. Page 3 of Exhibit JRW-9 shows the annual real GDP 21 growth rate between 1961 and 2022. Real GDP growth has gradually declined from the 5.0 22 percent to 6.0 percent range in the 1960s to the 2.0% to 3.0% range during the 2015–2019 23 period. Real GDP fell by 3.5% in 2020 but rebounded and grew by 5.7% in 2021 and 2.1% 24 in 2022.

The second component of nominal GDP growth is inflation. Page 4 of Exhibit JRW-

<sup>25</sup> 

<sup>&</sup>lt;sup>49</sup> Bradford Cornell, *Economic Growth and Equity Investing*, Fin. Analysts J. at 63 (Jan.-Feb. 2010).

1	9 shows inflation as measured by the annual growth rate in the Consumer Price Index
2	("CPI") from 1961 to 2022. The large increase in prices from the late 1960s to the early
3	1980s is readily evident. Equally evident is the rapid decline in inflation during the 1980s
4	as inflation declined from above ten percent to about four percent. Since that time, inflation
5	has gradually declined and was in the 2.0% range or below from 2015 to 2020. Prices
6	increased in 2021 and 2022 with the rebounding economy and increased by 4.7% in 2021
7	and 8.0% in 2022. Year-over-year inflation in 2022 jumped to 40-year highs in 2022 due
8	to supply chain issues and the Russia-Ukraine conflict, but longer-term inflation is
9	expected to be in the 2.0%–3.0% range.

10 The graphs on pages 2, 3, and 4 of Exhibit JRW-9 provide clear evidence of the 11 decline, in recent decades, in nominal GDP as well as its components, real GDP, and 12 inflation. To gauge the magnitude of the decline in nominal GDP growth, Table 12 13 provides the compounded GDP growth rates for 10-, 20-, 30-, 40- and 50- years. Whereas 14 the 50-year compounded GDP growth rate is 6.16%, there has been a near monotonic and 15 significant decline in nominal GDP growth over subsequent 10-year intervals. These figures 16 strongly suggest that nominal GDP growth in recent decades has slowed and that a figure in 17 the range of 4.0% to 5.0% is more appropriate today for the U.S. economy.

- 18
- 18 19

Table 12
Historical Nominal GDP Growth Rates

10-Year Average	5.22%
20-Year Average	4.45%
<b>30-Year Average</b>	4.73%
40-Year Average	5.07%
50-Year Average	6.05%

20

1	Long-Term GDP Projections also Indicate Slower GDP Growth in the Future: A
2	lower range is also consistent with long-term GDP forecasts. There are several forecasts of
3	annual GDP growth that are available from economists and government agencies. These
4	are listed in Panel B of Exhibit JRW-9, at 5.
5	The mean 10-year nominal GDP growth forecast (as of February 2024) by
6	economists in the recent Survey of Financial Forecasters is 4.24%. <sup>50</sup> The Energy
7	Information Administration (EIA), in its projections used in preparing Annual Energy
8	Outlook, forecasts long-term GDP growth of 4.3% for the period 2023 to 2053. <sup>51</sup> The
9	Congressional Budget Office (CBO), in its forecasts for the period 2023 to 2053, projects
10	a nominal GDP growth rate of 3.8%. <sup>52</sup> Finally, the Social Security Administration (SSA),
11	in its Annual OASDI Report, provides a projection of nominal GDP from 2023 to 2100.53
12	SSA's projected growth GDP growth rate over this period is 4.1%. The average projected
13	GDP growth rate for these four forecasts is 4.15%.
14	The bottom line is that the trends and projections suggest a long-term GDP growth
15	rate in the 4.0% to 4.5% range. As such, Ms. Bulkley's average projected EPS growth rate
16	of 10.51% is more than double the projected GDP growth.

<sup>&</sup>lt;sup>50</sup> Ten-year 2024 median projected real GDP growth of 2.00% and CPI inflation of 2.24%. Survey of Professional Forecasters, Fed. Reserve Bank of Philadelphia, https://www.philadelphiafed.org/research-and-data/real-timecenter/survey-of-professional-forecasters/.

<sup>&</sup>lt;sup>51</sup> *Annual Energy Outlook 2023*, U.S. ENERGY INFORMATION ADMINISTRATION, Table: Macroeconomic Indicators.

<sup>&</sup>lt;sup>52</sup> The 2023 Long-Term Budget Outlook, CONGRESSIONAL BUDGET OFFICE, July 15, 2023.

<sup>&</sup>lt;sup>53</sup> Social Security Administration, 2023 Annual Report of the Board of Trustees of the Old-Age, Survivors, and Disability Insurance (OASDI) Program, Table VI.G4, (July 1, 2023). The 4.1% growth rate is the growth in projected GDP from 2023 to 2100.

### 1 2

Q.

### PROSPECTIVE GDP GROWTH?

A. As addressed in a study by the consulting firm McKinsey & Co., two factors drive real
GDP growth over time: (a) the number of workers in the economy (employment); and (2)
the productivity of those workers (usually defined as output per hour).<sup>54</sup> According to
McKinsey, population and productivity growth drove real GDP growth over the past 50
years, at compound annual rates of 1.7% and 1.8%, respectively.

WHAT FUNDAMENTAL FACTORS HAVE LED TO THE DECLINE IN

8 However, global economic growth is projected to slow significantly in the years to 9 come. The primary factor leading to the decline is slow growth in employment (working-10 age population), which results from slower population growth and longer life expectancy. 11 McKinsey estimates that employment growth will slow to 0.3% over the next 50 years. 12 They conclude that even if productivity remains at the rapid rate of the past 50 years of 13 1.8%, real GDP growth will fall by 40% to 2.1%.

### Q. OVER THE MEDIUM TO LONG RUN, IS S&P 500 EPS GROWTH LIKELY TO OUTPACE GDP GROWTH?

A. No. Figure 18 shows the average annual growth rates for GDP and the S&P 500 EPS since 17 1960. The one very apparent difference between the two is that the S&P 500 EPS growth 18 rates are much more volatile than the GDP growth rates, when compared using the 19 relatively short, and somewhat arbitrary, annual conventions used in these data.<sup>55</sup>

<sup>&</sup>lt;sup>54</sup> James Manyika, et al., *Can Long-Term Growth be Saved*?, McKinsey Global Institute. (Jan. 1, 2015), https://www.mckinsey.com/featured-insights/employment-and-growth/can-long-term-global-growth-be-saved.

<sup>&</sup>lt;sup>55</sup> Timing conventions such as years and quarters are needed for measurement and benchmarking but are somewhat arbitrary. In reality, economic growth and profit accrual occur on continuous bases. A 2014 study evaluated the timing relationship between corporate profits and nominal GDP growth. The authors found that aggregate accounting earnings growth is a leading indicator of the GDP growth with a quarter-ahead forecast horizon. *See* 



17 that same article, Friedman also noted that profits must move back down to their traditional

18 share of GDP. In Table 13, I show that the aggregate net income levels for the S&P 500

19 companies, using 2024 figures, represent 6.43% of nominal GDP.

20

### Table 13

Yaniv Konchitchki and Panos N. Patatoukas, Accounting Earnings and Gross Domestic Product, 57 J. of Accounting and Economics 76–88 (2014).

<sup>&</sup>lt;sup>56</sup> Shaun Tully, *Corporate Profits Are Soaring. Here's Why It Can't Last*, Fortune, Dec. 7, 2017, http://fortune.com/2017/12/07/corporate-earnings-profit-boom-end/.

	2024	
	Value (\$B)	
Aggregate Net Income for S&P 500	\$1,912,184.00	
2024 Nominal U.S. GDP	29,719,684.00	
Net Income/GDP (%)	6.43%	

### S&P 500 Aggregate Net Income as a Percent of GDP

Data Sources: 2024 Net Income for S&P 500 companies

1

2 3

4

5

https://www.gurufocus.com/economic\_indicators/5749/sp-500-net-income-ttm. 2022 Nominal GDP – https://pages.stern.nyu.edu/~adamodar/.

Short-Term Factors Impact S&P 500 EPS: The growth rates in the S&P 500 EPS and 6 7 GDP can diverge on a year-to-year basis due to short-term factors that impact S&P 500 8 EPS in a much greater way than GDP. As shown above, S&P EPS growth rates are much 9 more volatile than GDP growth rates. The EPS growth for the S&P 500 companies has 10 been influenced by low labor costs and interest rates, commodity prices, the recovery of 11 different sectors such as the energy and financial sectors, and the cut in corporate tax rates. 12 These short-term factors can make it appear that there is a disconnect between the economy 13 and corporate profits. 14 The Differences Between the S&P 500 EPS and GDP: In the recent years, as the EPS 15 for the S&P 500 has grown at a faster rate than U.S. nominal GDP, some have in the 16 financial press have questioned the earnings and GDP relationship, and highlighted the differences between the S&P 500 and GDP.<sup>57</sup> These differences include: (a) corporate 17 18 profits are about 2/3 manufacturing driven, while GDP is 2/3 services driven; (b) consumer 19 discretionary spending accounts for a smaller share of S&P 500 profits (15%) than of GDP

<sup>&</sup>lt;sup>57</sup> See the following studies: Burt White and Jeff Buchbinder, *The S&P and GDP are not the Same Thing*, LPL Fin. (Nov. 4, 2014, 11:31 AM), https://www.businessinsider.com/sp-is-not-gdp-2014-11; Matt Comer, *How Do We Have 18.4% Earnings Growth In A 2.58% GDP Economy*?, Seeking Alpha (Åpr. 19, 2018, 1:04 PM), https://seekingalpha.com/article/4164052-18\_4-percent-earnings-growth-2\_58-percent-gdp-economy; Shaun Tully, *How on Earth Can Profits Grow at 10% in a 2% Economy*?, Fortune, (July 27, 2017, 1:26 PM), http://fortune.com/2017/07/27/profits-economic-growth/.

1 (23%); (c) corporate profits are more international-trade driven, while exports minus 2 imports tend to drag on GDP; and (d) S&P 500 EPS is affected not just by corporate profits 3 but also by share buybacks on the positive side (fewer shares boost EPS), and by share 4 dilution on the negative side (new shares dilute EPS). While these differences may seem 5 significant, it must be remembered that the Income Approach to measure GDP includes 6 corporate profits (in addition to employee compensation and taxes on production and 7 imports) and therefore effectively accounts for the first three factors.<sup>58</sup> 8 The bottom line is that, despite the intertemporal short-term differences between 9 S&P 500 EPS and nominal GDP growth, corporate profits and GDP remain inevitably linked over the long-term. 10 11 Q. PLEASE PROVIDE ADDITIONAL EVIDENCE SHOWING THAT MS. 12 BULKLEY'S S&P 500 EPS GROWTH RATE OF 10.51% IS NOT REALISTIC. 13 Beyond my previous discussion, I have performed the following analysis of S&P 500 EPS A. 14 and GDP growth in Table 14. Specifically, I started with the 2024 aggregate net income 15 for the S&P 500 companies and 2024 nominal GDP for the U.S. As shown in Table 13, the 16 aggregate profit for the S&P 500 companies represented 6.43% of nominal GDP in 2024. 17 In Table 14, I then projected the aggregate net income level for the S&P 500 companies 18 and GDP as of the year 2050. For the growth rate for the S&P 500 companies, I used Ms. 19 Bulkley's average projected S&P 500 EPS growth rate of 10.51%. As a growth rate for 20 nominal GDP, I used the average of the long-term projected GDP growth rates from CBO, 21 SFF, SSA, and EIA (3.8%, 4.4%, 4.1%, and 4.3%, respectively), which is 4.15%. The

<sup>&</sup>lt;sup>58</sup> The Income Approach to measuring GDP includes wages, salaries, and supplementary labor income, corporate profits, interest and miscellaneous investment income, farmers' incomes, and income from non-farm unincorporated businesses.

0	Table 14
8	large component of GDP.
7	GDP in 2050. It is totally unrealistic for the net income of the S&P 500 to become such a
6	the S&P 500 companies will represent growth from 6.43% of GDP in 2024 to 30.05% of
5	GDP grows at rates projected by major government agencies (4.15%), the net income of
4	grows in accordance with the growth rate used by Ms. Bulkley (10.51%), and if nominal
3	expected to grow to \$85.54 trillion. As such, if the aggregate net income for the S&P 500
2	Ms. Bulkley's 10.51% EPS growth rate is \$25.70 trillion. Over the same period, GDP is
1	projected 2050 level for the aggregate net income level for the S&P 500 companies using

l able 14
Projected S&P 500 Earnings and Nominal GDP
2024–2050
S&P 500 Aggregate Net Income as a Percent of GDP

	2024 Value (\$B)	Growth Rate	No. of Years	2050 Value (\$B)
Aggregate Net Income for S&P 500	\$1,912,184	10.51%	26	\$25,702,226
2024 Nominal U.S. GDP	\$29,719,684	4.15%	26	\$85,543,166
Net Income/GDP (%)	6.43%			30.05%

13Income/GDP (%)0.43%14Data Sources: 2024 Net Income for S&P 500 companies15https://www.gurufocus.com/economic\_indicators/5749/sp-500-net-income-ttm.16Growth Rate - Ms. Bulkley's average projected S&P 500 EPS growth rate of 10.51%.

Nominal GDP Growth Rate – The average of the long-term projected GDP growth rates from CBO, SFF,
SSA, and EIA (3.8%, 4.4%, 4.1%, and 4.3% = 4.15%).

### 19 Q. PLEASE PROVIDE A SUMMARY ASSESSMENT OF GDP AND S&P 500 EPS

20 **GROWTH RATES.** 

10 11 12

21 A. The long-term link between corporate profits and GDP is inevitable. The short-term

### 22 differences in growth between the two indicate that corporate profits as a share of GDP

- tend to go far higher after periods where they are depressed and then drop sharply after
- they have been hovering at historically high levels. In a famous 1999 Fortune article,

1		Warren Buffet made the following observation: <sup>59</sup>
2		You know, someone once told me that New York has more lawyers than
3		people. I think that's the same fellow who thinks profits will become larger
4		than GDP. When you begin to expect the growth of a component factor to
5		forever outpace that of the aggregate, you get into certain mathematical
6		problems. In my opinion, you have to be wildly optimistic to believe that
7		corporate profits as a percent of GDP can, for any sustained period, hold
8		much above 6%.
9		
10		In sum, Ms. Bulkley's average long-term S&P 500 EPS growth rate of 10.51% is
11		highly overstated and has little (if any) basis in economic reality. In the end, the question
12		remains whether corporate profits can grow faster than GDP. Jeremy Siegel, the renowned
13		finance professor at the Wharton School of the University of Pennsylvania, believes that
14		going forward, earnings per share can grow about half a point faster than nominal GDP, or
15		about five percent, due to the big gains in the technology sector. But Siegel also believes
16		that sustained EPS growth matching analysts' near-term projections is absurd: "The idea
17		of 8% or 10% or 12% growth is ridiculous. It will not happen."60
18		
		C. Alternative Risk Premium Approach
19		
20	Q.	PLEASE REVIEW MS. BULKLEY'S ALTERNATIVE RISK PREMIUM MODEL.
21	A.	On pages 33-7 of her testimony and in Exhibit No. AEB-7, Ms. Bulkley estimates an equity
22		cost rate using a risk premium model. Using the quarterly authorized ROEs for electric utility

23

companies from Q1 1992 until Q3 2024, Ms. Bulkley develops an equity cost rate by

<sup>&</sup>lt;sup>59</sup> Carol Loomis, *Mr. Buffet on the Stock Market*, Fortune (Nov. 22, 1999), https://money.cnn.com/magazines/fortune/fortune\_archive/1999/11/22/269071/.

<sup>&</sup>lt;sup>60</sup> Shaun Tully, *Corporate Profits Are Soaring. Here's Why It Can't Last, Fortune* (Dec. 7, 2017, 3:30 AM), http://fortune.com/2017/12/07/corporate-earnings-profit-boom-end/.

1		regressing the authorized returns on equity for electric utility companies on the 30-year
2		Treasury Yield. She then adds the risk premium established by regressing the authorized
3		returns on equity to each of her three different 30-year Treasury yields: (a) a current yield of
4		4.07%, (b) a near-term projected yield of 4.02%, and (c) a long-term projected yield of 4.30%.
5		Ms. Bulkley's risk premium results are provided on page 2 of Exhibit JRW-7. Ms. Bulkley
6		reports risk premium equity cost rates ranging from 10.24% to 10.41%.
7	Q.	WHAT ARE THE ERRORS IN MS. BULKLEY'S BOND YIELD PLUS RISK
8		PREMIUM ("BYRP") ANALYSIS?
9	A.	There are several problems with this approach for calculating the risk premium.
10		First, the methodology produces an inflated measure of the risk premium because it
11		uses historic authorized ROEs and Treasury yields, and the resulting risk premium is applied
12		to projected Treasury yields. Since Treasury yields are always forecasted to increase, the
13		resulting risk premium would be smaller if done correctly, which would be the result using
14		projected Treasury yields in the analysis rather than historic Treasury yields.
15		Second, Ms. Bulkley's risk premium approach is a gauge of <i>regulator</i> behavior and
16		not investor behavior. Capital costs are determined in the marketplace through the financial
17		decisions of investors and are reflected in such fundamental factors as dividend yields,
18		expected growth rates, interest rates, and investors' assessment of the risk and expected
19		return of different investments. Regulatory commissions evaluate capital market data in
20		setting authorized ROEs, but also consider other utility- and rate case-specific information
21		in setting ROEs. As such, Ms. Bulkley's approach and results reflect other factors such as
22		capital structure, credit ratings and other risk measures, service territory, capital

1		expenditures, energy supply issues, rate design, investment and expense trackers, and other
2		factors used by utility commissions in determining an appropriate ROE in addition to
3		capital costs. This may especially be true when the authorized ROE data includes the results
4		of rate cases that are settled and not fully litigated.
5		Third, since the stocks of electric utilities have been selling above book value for
6		the last decade, it is obvious that the authorized ROEs of state utility commissions are
7		above the returns that investors require.
8		Fourth, the ROE derived from this approach is dependent on the authorized ROEs
9		from state utility commissions. As discussed earlier in this testimony, Werner and Jarvis
10		(2022), demonstrated that authorized ROEs over the past four decades have not declined
11		in line with capital costs and therefore past authorized ROEs have overstated the actual
12		cost of equity capital.
13	Q.	HOW DO MS. BULKLEY'S RISK PREMIUM RESULTS COMPARE TO THE
14		CURRENT AUTHORIZED ROES FOR ELECTRIC UTILITIES?
15	A.	Ms. Bulkley reports ROE results as high as 10.41% from her risk premium model, which
16		is based on authorized ROEs. By comparison, the average authorized ROE for electric utility

17 companies in 2024 was 9.70% and 9.72% in the first quarter of 2024.

### VIII. <u>SUMMARY AND CONCLUSIONS</u>

1

## 2 Q. PLEASE SUMMARIZE YOUR TESTIMONY ON THE APPROPRIATE COST OF 3 CAPITAL FOR THE COMPANIES.

4 A. I demonstrate that the Companies' proposed capital structure includes a higher common 5 equity ratio and less financial risk than the averages of the two proxy groups. I also show 6 that EVRG has \$2.7 billion in debt at the holding company level. Allocating 50% of this 7 debt to EKC, the resulting revised capital structure includes a common equity ratio of 8 45.93%. While this figure is still higher than the average of the proxy groups, in the interest 9 of conservatism I will employ a capital structure with a common equity ratio of 50.0%. I 10 am using a blended (EKC and EVRG) cost of long-term debt of 4.65%. I have applied the 11 DCF Model and the CAPM to my proxy group of publicly-held electric utility companies 12 and Ms. Bulkley's proxy group. These results indicate that the appropriate equity cost rate 13 for companies in the Electric and Bulkley Proxy Groups is in the 8.85% to 9.80% range. 14 Given that: (1) I rely primarily on the DCF model and the results for the Electric Proxy 15 Group; (2) I have recommended a capital structure with a higher common equity ratio and 16 lower financial risk than the two proxy groups; (3) the Companies' investment risk is 17 slightly below the average of the proxy groups; and (4) the recent market volatility and 18 increase in interest rates, I am using a ROE of 9.50% for the Companies. Given my 19 proposed capital structure and capital cost rates for the Companies, I am recommending an 20 overall fair rate of return or cost of capital of 7.07% for EKC. These are summarized in 21 Table 2 and Exhibit JRW-1.

### 1 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

2 A. Yes.

#### VERIFICATION

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF CENTRE

ss:

) )

)

I, Dr. J. Randall Woolridge, being duly sworn upon his oath, deposes and states that he is a consultant for the Citizens' Utility Ratepayer Board, that he has read and is familiar with the foregoing Direct Testimony, and that the statements made herein are true and correct to the best of his knowledge, information, and belief.

1. Randall Woolridge

SUBSCRIBED AND SWORN to before me this <u>6</u> day of June, 2025.

Mandy Sul Su Notary Public

My Commission expires: October 21, 2025



#### Appendix A

#### Educational Background, Research, and Related Business Experience J. Randall Woolridge

J. Randall Woolridge is a Professor of Finance and the Goldman, Sachs & Co. and Frank P. Smeal Endowed Faculty Fellow in Business Administration in the College of Business Administration of the Pennsylvania State University in University Park, PA. In addition, Professor Woolridge is Director of the Smeal College Trading Room and President and CEO of the Nittany Lion Fund, LLC.

Professor Woolridge received a Bachelor of Arts degree in Economics from the University of North Carolina, a Master of Business Administration degree from the Pennsylvania State University, and a Doctor of Philosophy degree in Business Administration (major area-finance, minor area-statistics) from the University of Iowa. He has taught Finance courses including corporation finance, commercial and investment banking, and investments at the undergraduate, graduate, and executive MBA levels.

Professor Woolridge's research has centered on empirical issues in corporation finance and financial markets. He has published over 35 articles in the best academic and professional journals in the field, including the *Journal of Finance*, the *Journal of Financial Economics*, and the *Harvard Business Review*. His research has been cited extensively in the business press. His work has been featured in the *New York Times, Forbes, Fortune, The Economist, Barron's, Wall Street Journal, Business Week, Investors' Business Daily, USA Today*, and other publications. In addition, Dr. Woolridge has appeared as a guest to discuss the implications of his research on CNN's *Money Line*, CNBC's *Morning Call* and *Business Today*, and Bloomberg's *Morning Call*.

Professor Woolridge's co-authored stock valuation book, *The StreetSmart Guide to Valuing a Stock* (McGraw-Hill, 2003), was released in its second edition. He has also co-authored *Spinoffs and Equity Carve-Outs: Achieving Faster Growth and Better Performance* (Financial Executives Research Foundation, 1999), as well as a textbook entitled *Basic Principles of Finance* (Kendall Hunt, 2011).

Professor Woolridge has also consulted with corporations, financial institutions, and government agencies. In addition, he has directed and participated in university- and company-sponsored professional development programs for executives in 25 countries in North and South America, Europe, Asia, and Africa.

Over the past 35 years Dr. Woolridge has prepared testimony and/or provided consultation services in regulatory rate cases in the rate of return area in following states: Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Washington, D.C. He has also testified before the Federal Energy Regulatory Commission.

### J. Randall Woolridge

#### **Office Address**

302 Business Building The Pennsylvania State University University Park, PA 16802 814-865-1160 Home Address 120 Haymaker Circle State College, PA 16801 814-238-9428

#### Academic Experience

**Professor of Finance**, the Smeal College of Business Administration, the Pennsylvania State University (July 1, 1990 to the present).

President, Nittany Lion Fund LLC, (January 1, 2005 to the present) Director, the Smeal College Trading Room (January 1, 2001 to the present) Goldman, Sachs & Co. and Frank P. Smeal Endowed University Fellow in Business Administration (July 1, 1987 to the present).

Associate Professor of Finance, College of Business Administration, the Pennsylvania State University (July 1, 1984 to June 30, 1990).

Assistant Professor of Finance, College of Business Administration, the Pennsylvania State University (September, 1979 to June 30, 1984).

### **Education**

**Doctor of Philosophy in Business Administration**, the University of Iowa. Major field: Finance. **Master of Business Administration**, the Pennsylvania State University. **Bachelor of Arts**, the University of North Carolina. Major field: Economics.

### **Books**

James A. Miles and J. Randall Woolridge, *Spinoffs and Equity Carve-Outs: Achieving Faster Growth and Better Performance* (Financial Executives Research Foundation), 1999 Patrick Cusatis, Gary Gray, and J. Randall Woolridge, *The StreetSmart Guide to Valuing a Stock* (2<sup>nd</sup> Edition, McGraw-Hill), 2003.

J. Randall Woolridge and Gary Gray, *The New Corporate Finance, Capital Markets, and Valuation: An Introductory Text* (Kendall Hunt, 2003).

### Research

Dr. Woolridge has published over 35 articles in the best academic and professional journals in the field, including the *Journal of Finance*, the *Journal of Financial Economics*, and the *Harvard Business Review*.

Docket No. 25-EKCE-294-RTS Exhibit JRW-1 Cost of Capital Recommendation Page 1 of 1

### **Exhibit JRW-1**

Evergy Kansas Central, Inc. and Evergy Kansas South Inc.

	Capitalization	Cost	Weighted
	Ratios	Rate	<b>Cost Rate</b>
Long-Term Debt	50.00%	4.650%	2.32%
Common Equity	<u>50.00%</u>	<u>9.500%</u>	<u>4.75%</u>
Total Capital	100.00%		7.07%

**CURB's Cost of Capital** 



Data Source: Mergent Bond Record

Exhibit JRW-2 Long-Term 'A' Rated Public Utility Bonds

Docket No. 25-EKCE-294-RTS Exhibit JRW-2 **Public Utility Capital Cost Indicators** Page 2 of 3



#### Exhibit JRW-2

Data Source: Value Line Investment Survey.


### Exhibit JRW-3 Evergy Kansas Central, Inc. and Evergy Kansas South Inc. Summary Financial Statistics for Proxy Group

						Panel A								
						Electric Proxy Gro	up							
		Operating	Reg Elec	Percent Reg	Net Plant	Market Cap	S&P Issuer	Moody's Long	Interest	Primary Service	Common	Return on	Market to	Last Filing
Company		Revenue (\$bil)	Revenue	Gas Revenue	(\$bil)	(\$bil)	Credit Rating	Term Rating	Coverage	ABulkley	Equity Ratio	Equity	Book Ratio	Period
Alliant Energy Corporation (NYSE-LNT)	LNT	\$3.98	85%	12%	\$18.70	15.97	BBB+	Baa2	2.07	WI,IA,IL,MN	0.40	10.01	2.28	12/31/2024
Ameren Corporation (NYSE-AEE)	AEE	\$7.32	86%	14%	\$36.38	26.22	BBB+	Baa1	2.93	IL,MO	0.39	10.01	2.16	12/31/2024
American Electric Power Co. (NYSE-AEP)	AEP	\$19.24	99%	0%	\$83.00	54.58	BBB+	Baa2	2.45	10 States	0.37	11.39	2.03	12/31/2024
Avista Corporation (NYSE-AVA)	AVA	\$1.94	70%	30%	\$6.12	3.13	BBB	Baa2	2.35	WA,OR	0.45	7.09	1.21	12/31/2024
CenterPoint Energy, Inc. (NYSE-CNP)	CNP	\$8.64	53%	47%	\$32.12	21.77	BBB+	Baa2	2.38	TX,IN	0.34	10.02	2.04	12/31/2024
CMS Energy Corporation (NYSE-CMS)	CMS	\$7.52	67%	28%	\$27.49	21.41	BBB+	Baa2	2.45	MI	0.33	11.23	2.67	12/31/2024
Consolidated Edison, Inc. (NYSE-ED)	ED	\$15.26	76%	20%	\$52.66	34.99	A-	Baa1	2.76	NY,NJ	0.44	8.44	1.59	12/31/2024
Dominion Resources, Inc. (NYSE-D)	D	\$14.46	91%	4%	\$69.45	45.75	BBB+	Baa2	2.45	VA,NC,SC	0.38	6.49	1.74	12/31/2024
DTE Energy Company (NYSE-DTE)	DTE	\$12.46	51%	14%	\$31.08	27.05	BBB+	Baa2	2.66	MI	0.33	12.34	2.31	12/31/2024
Duke Energy Corporation (NYSE-DUK)	DUK	\$29.93	93%	7%	\$122.76	89.17	BBB+	Baa2	2.38	NC,SC,IN,OH,KY	0.37	9.08	1.81	12/31/2024
Edison International (NYSE-EIX)	EIX	\$17.60	100%	0%	\$60.31	21.21	BBB	Baa3	2.07	CA	0.27	7.20	1.52	12/31/2024
Entergy Corporation (NYSE-ETR)	ETR	\$11.81	98%	1%	\$47.85	34.94	BBB+	Baa2	3.10	AR,LA,MS,TX	0.34	6.95	2.31	12/31/2024
Evergy, Inc. (NYSE-EVRG)	EVRG	\$5.85	100%	0%	\$24.79	15.12	BBB+	Baa2	2.60	KS,MO	0.41	9.00	1.52	12/31/2024
Eversource Energy (NYSE-ES)	ES	\$11.90	76%	18%	\$41.04	21.53	BBB+	Baa2	2.90	CT,MA,NH	0.34	5.55	1.43	12/31/2024
Exelon Corporation (NYSE-EXC)	EXC	\$23.03	93%	8%	\$78.41	43.10	A-	Baa2	2.20	PA,NJ,IL,MD	0.36	9.34	1.60	12/31/2024
FirstEnergy Corp. (NYSE-FE)	FE	\$12.94	47%	0%	\$41.33	22.07	BBB	Baa3	2.18	PA,OH,NJ,MDWV,NY	0.34	9.15	1.77	12/31/2024
IDACORP, Inc. (NYSE-IDA)	IDA	\$1.82	100%	0%	\$6.52	6.07	BBB	Baa2	2.27	ID,OR	0.52	9.27	1.82	12/31/2024
NextEra Energy, Inc. (NYSE-NEE)	NEE	\$24.75	99%	0%	\$140.05	144.01	A-	Baa1	3.29	FL	0.37	9.51	2.87	12/31/2024
NorthWestern Corporation (NYSE-NWE)	NWE	\$1.51	79%	21%	\$6.40	3.38	BBB	Baa2	2.48	MT,SD	0.48	7.94	1.18	12/31/2024
OGE Energy Corp. (NYSE-OGE)	OGE	\$2.92	98%	0%	\$11.54	8.87	BBB+	Baa1	2.76	OK,AR	0.46	9.65	1.91	12/31/2024
Pinnacle West Capital Corp. (NYSE-PNW)	PNW	\$5.12	100%	0%	\$20.11	10.81	BBB+	Baa2	2.64	AZ	0.38	9.53	1.60	12/31/2024
Portland General Electric Company (NYSE-PO	POR	\$3.44	100%	0%	\$10.30	4.80	BBB+	A3	2.30	OR	0.42	8.80	1.27	12/31/2024
PPL Corporation (NYSE-PPL)	PPL	\$8.46	0%	0%	\$33.15	25.02	A-	Baa1	2.56	PA,KY,RI	0.45	6.34	1.78	12/31/2024
Public Service Enterprise Gp. Inc. (NYSE-PEG	PEG	\$10.29	74%	22%	\$40.23	38.99	BBB+	A3	3.16	NJ	0.41	11.22	2.42	12/31/2024
Southern Company (NYSE-SO)	SO	\$25.57	78%	14%	\$105.87	97.31	A-	Baa1	2.80	GA,AL,MS	0.33	11.85	2.93	12/31/2024
WEC Energy Group (NYSE-WEC)	WEC	\$8.60	57%	38%	\$34.68	32.98	A-	Baa1	2.60	WI,MI,ILMN	0.38	12.25	2.66	12/31/2024
Xcel Energy Inc. (NYSE-XEL)	XEL	\$13.38	83%	17%	\$57.86	38.87	BBB+	Baa1	1.92	MN,WI,ND,SD,MI	0.39	10.43	1.99	12/31/2024
Mean		\$11.47	80%	12%	\$45.93	\$33.67	BBB+	Baa2	2.55		38.8%	9.26	1.94	
Median		\$10.29	85%	8%	\$36.38	\$25.02	BBB+	Baa2	2.48		37.9%	9.34	1.82	
<b>B B B B B B B B B B</b>	~ ~ ~ ~ ~		-											

Data Source: Company 2024 SEC 10-K filings, S&P Capital IQ; Value Line Investment Survey, 2025.

						Panel B								
						Bulkley Proxy Gro	սթ							
		Operating	Percent Reg Elec	Percent Reg	Net Plant	Market Cap	S&P Issuer	Moody's Long	Pre-Tax Interest	Primary Service	Common	Return on	Market to	Last Filing
Company		Revenue (\$bil)	Revenue	Gas Revenue	(\$bil)	(\$bil)	Credit Rating	Term Rating	Coverage	ABulkley	Equity Ratio	Equity	Book Ratio	renou
Alliant Energy Corporation (NYSE-LNT)	LNT	\$3.98	85%	12%	\$18.70	15.97	BBB+	Baa2	2.07	WI,IA,IL,MN	0.40	10.01	2.28	12/31/2024
Ameren Corporation (NYSE-AEE)	AEE	\$7.32	86%	14%	\$36.38	26.22	BBB+	Baa1	2.93	IL,MO	0.39	10.01	2.16	12/31/2024
American Electric Power Co. (NYSE-AEP)	AEP	\$19.24	99%	0%	\$83.00	54.58	BBB+	Baa2	2.45	10 States	0.37	11.39	2.03	12/31/2024
Avista Corporation (NYSE-AVA)	AVA	\$1.94	70%	30%	\$6.12	3.13	BBB	Baa2	2.35	WA,OR	0.45	7.09	1.21	12/31/2024
CMS Energy Corporation (NYSE-CMS)	CMS	\$7.52	67%	28%	\$27.49	21.41	BBB+	Baa2	2.45	MI	0.33	11.23	2.67	12/31/2024
DTE Energy Company (NYSE-DTE)	DTE	\$12.46	51%	14%	\$31.08	27.05	BBB+	Baa2	2.66	MI	0.33	12.34	2.31	12/31/2024
Duke Energy Corporation (NYSE-DUK)	DUK	\$29.93	93%	7%	\$122.76	89.17	BBB+	Baa2	2.38	NC,SC,IN,OH,KY	0.37	9.08	1.81	12/31/2024
Entergy Corporation (NYSE-ETR)	ETR	\$11.81	98%	1%	\$47.85	34.94	BBB+	Baa2	3.10	AR,LA,MS,TX	0.34	6.95	2.31	12/31/2024
IDACORP, Inc. (NYSE-IDA)	IDA	\$1.82	100%	0%	\$6.52	6.07	BBB	Baa2	2.27	ID,OR	0.52	9.27	1.82	12/31/2024
NextEra Energy, Inc. (NYSE-NEE)	NEE	\$24.75	99%	0%	\$140.05	144.01	A-	Baa1	3.29	FL	0.37	9.51	2.87	12/31/2024
NorthWestern Corporation (NYSE-NWE)	NWE	\$1.51	79%	21%	\$6.40	3.38	BBB	Baa2	2.48	MT,SD	0.48	7.94	1.18	12/31/2024
OGE Energy Corp. (NYSE-OGE)	OGE	\$2.92	98%	0%	\$11.54	8.87	BBB+	Baa1	2.76	OK,AR	0.46	9.65	1.91	12/31/2024
Pinnacle West Capital Corp. (NYSE-PNW)	PNW	\$5.12	100%	0%	\$20.11	10.81	BBB+	Baa2	2.64	AZ	0.38	9.53	1.60	12/31/2024
Portland General Electric Company (NYSE-PO	POR	\$3.44	100%	0%	\$10.30	4.80	BBB+	A3	2.30	OR	0.42	8.80	1.27	12/31/2024
PPL Corporation (NYSE-PPL)	PPL	\$8.46	0%	0%	\$33.15	25.02	A-	Baa1	2.56	PA,KY,RI	0.45	6.34	1.78	12/31/2024
Southern Company (NYSE-SO)	so	\$25.57	78%	14%	\$105.87	97.31	A-	Baa1	2.80	GA,AL,MS	0.33	11.85	2.93	12/31/2024
Xcel Energy Inc. (NYSE-XEL)	XEL	\$13.38	83%	17%	\$57.86	38.87	BBB+	Baa1	1.92	MN,WI,ND,SD,MI	0.39	10.43	1.99	12/31/2024
Mean		\$10.66	81%	9%	\$45.01	\$35.98	BBB+	Baa2	2.55		39.9%	9.49	2.01	
Median	-	\$7.52	86%	7%	\$31.08	\$25.02	BBB+	Baa2	2.48		39.2%	9.53	1.99	1

Data Source: Company 2024 SEC 10-K filings, S&P Capital IQ; Value Line Investment Survey, 2025.

### Evergy Kansas Central, Inc. and Evergy Kansas South Inc. *Value Line* Risk Metrics

	Panel A				
E	ectric Proxy	Group			
		Financial		Earnings	Stock Price
Company	Beta	Strength	Safety	Predictability	Stability
Alliant Energy Corporation (NYSE-LNT)	0.95	A+	1	100	95
Ameren Corporation (NYSE-AEE)	0.90	A+	1	100	95
American Electric Power Co. (NYSE-AEP)	0.85	A	1	90	95
Avista Corporation (NYSE-AVA)	0.75	A	3	70	95
CenterPoint Energy, Inc. (NYSE-CNP)	1.10	A	3	60	80
CMS Energy Corporation (NYSE-CMS)	0.85	B++	2	90	95
Consolidated Edison, Inc. (NYSE-ED)	0.65	A+	1	100	100
Dominion Resources, Inc. (NYSE-D)	0.75	A	2	70	95
DTE Energy Company (NYSE-DTE)	1.00	B++	2	70	90
Duke Energy Corporation (NYSE-DUK)	0.70	Α	2	100	100
Edison International (NYSE-EIX)	0.90	B+	3	15	25
Entergy Corporation (NYSE-ETR)	1.00	A+	1	70	90
Evergy, Inc. (NYSE-EVRG)	0.95	B++	2	85	90
Eversource Energy (NYSE-ES)	0.95	Α	2	100	90
Exelon Corporation (NDW-EXC)	NMF	A	3	90	NMF
FirstEnergy Corp. (NYSE-FE)	0.75	B++	3	100	80
IDACORP, Inc. (NYSE-IDA)	0.75	A	1	100	100
NextEra Energy, Inc. (NYSE-NEE)	0.90	A+	2	95	75
NorthWestern Corporation (NYSE-NWE)	0.80	B++	2	95	95
OGE Energy Corp. (NYSE-OGE)	1.05	B++	3	95	85
Pinnacle West Capital Corp. (NYSE-PNW)	0.80	B++	2	85	95
Portland General Electric Company (NYSE-POR)	0.80	<b>B</b> ++	2	90	95
PPL Corporation (NYSE-PPL)	0.90	A+	2	45	95
Public Service Enterprise Group Incorporated (NYSI	0.90	A	1	100	95
Southern Company (NYSE-SO)	0.75	A	2	90	100
WEC Energy Group (NYSE-WEC)	0.90	A+	1	100	85
Xcel Energy Inc. (NYSE-XEL)	0.75	Α	2	100	100
Mean	0.86	A	1.9	85	90

Data Source: Value Line Investment Survey, 2025.

Panel B Bulkley Proxy Group										
		Financial		Earnings	Stock Price					
Company	Beta	Strength	Safety	Predictability	Stability					
Alliant Energy Corporation (NYSE-LNT)	0.95	A+	1	100	95					
Ameren Corporation (NYSE-AEE)	0.90	A+	1	100	95					
American Electric Power Co. (NYSE-AEP)	0.85	Α	1	90	95					
Avista Corporation (NYSE-AVA)	0.75	Α	3	70	95					
CMS Energy Corporation (NYSE-CMS)	0.85	B++	2	90	95					
DTE Energy_Company (NYSE-DTE)	1.00	B++	2	70	90					
Duke Energy Corporation (NYSE-DUK)	0.70	Α	2	100	100					
Entergy Corporation (NYSE-ETR)	1.00	A+	1	70	90					
IDACORP, Inc. (NYSE-IDA)	0.75	Α	1	100	100					
NextEra Energy, Inc. (NYSE-NEE)	0.90	A+	2	95	75					
NorthWestern Corporation (NYSE-NWE)	0.80	B++	2	95	95					
OGE Energy Corp. (NYSE-OGE)	1.05	B++	3	95	85					
Pinnacle West Capital Corp. (NYSE-PNW)	0.80	B++	2	85	95					
Portland General Electric Company (NYSE-POR)	0.80	B++	2	90	95					
PPL Corporation (NYSE-PPL)	0.90	A+	2	45	95					
Southern Company (NYSE-SO)	0.75	Α	2	90	100					
Xcel Energy Inc. (NYSE-XEL)	0.75	Α	2	100	100					
Mean	0.85	Α	1.8	87	94					

Data Source: Value Line Investment Survey, 2025.

Electric and Bulkley Proxy Groups											
	Mo	ody's	Standard & Poor's								
	Long-Term	Issuer Rating	Long-T	erm Issuer Rating							
<u>Electric Proxy</u>	Long-Term	Numerical	Long-Term								
<u>Group</u>	Issuer Rating	Weighting	Issuer Rating	Numerical Weighting							
LNT	Baa2	9.0	BBB+	8.0							
AEE	Baa1	8.0	BBB+	8.0							
AEP	Baa2	9.0	BBB+	8.0							
AVA	Baa2	9.0	BBB	9.0							
CNP	Baa2	9.0	BBB+	8.0							
CMS	Baa2	9.0	BBB+	8.0							
ED	Baa1	8.0	A-	7.0							
D	Baa2	9.0	BBB+	8.0							
DTE	Baa2	9.0	BBB+	8.0							
DUK	Baa2	9.0	BBB+	8.0							
EIX	Baa3	10.0	BBB	9.0							
ETR	Baa2	9.0	BBB+	8.0							
EVRG	Baa2	9.0	BBB+	8.0							
ES	Baa2	9.0	BBB+	8.0							
EXC	Baa2	9.0	A-	7.0							
FE	Baa3	10.0	BBB	9.0							
IDA	Baa2	9.0	BBB	9.0							
NEE	Baa1	8.0	A-	7.0							
NWF	Baa1 Baa2	9.0	RRR	9.0							
OCE	Baa1	9.0	BBB BBB+	9.0							
PNW	Daal Daal	0.0		8.0							
		<b>7.0</b>		8.0							
	A3 Daa1	7.0		7.0							
PFC		<u> </u>	A- DDD+	7.0							
1 EG 80	A3 Deel	7.0		7.0							
	Daa1 Daa1	0.0	A-	7.0							
WEC VEI	Daal Daal	8.0	A- DDD	7.0							
AEL	Baa1	8.0	BBB+	8.0							
Average	Baal	8.0	BBB+	8.0							
Bulkley Proxy Grou											
	Baa2	9.0	BBB+	8.0							
AEE	Baal	8.0	BBB+	8.0							
AEP	Baa2	9.0	BBB+	8.0							
AVA	Baa2	9.0	BBB	9.0							
CMS	Baa2	9.0	BBB+	8.0							
DTE	Baa2	9.0	BBB+	8.0							
DUK	Baa2	9.0	BBB+	8.0							
ETR	Baa2	9.0	BBB+	8.0							
IDA	Baa2	9.0	BBB	9.0							
NEE	Baa1	8.0	A-	7.0							
NWE	Baa2	9.0	BBB	9.0							
OGE	Baa1	8.0	BBB+	8.0							
PNW	Baa2	8.0	BBB+	8.0							
POR	A3	7.0	BBB+	8.0							
PPL	Baa1	8.0	A-	7.0							
SO	Baa1	8.0	A-	7.0							
XEL	Baa1	8.0	BBB+	8.0							
Average	Baa2	8.7	BBB+	7.9							

# Evergy Kansas Central, Inc. and Evergy Kansas South Inc. Comparison of Long-Term Issuer Ratings for

Date Source: S&P Cap IQ.

# Docket No. 25-EKCE-294-RTS Exhibit JRW-3 Summary Financial Statistics for Proxy Groups Page 4 of 5

# Numerical Assignment for Moody's and Standard & Poor's Bond Ratings

	Numerical	St	tandard &	Numerical
<b>Moody's Bond</b>	Bond	Po	oor's Bond	Bond
Rating	Weighting		Rating	Weighting
Aaa	1		AAA	1
Aa1	2		AA+	2
Aa2	3		AA	3
Aa3	4		AA-	4
<u> </u>	5		Δ+	5
	5			5
A2	7		<u>A</u>	0
AJ	/		A-	/
Baa1	8		BBB+	8
Baa2	9		BBB	9
Baa3	10		BBB-	10
Ba1	11		BB+	11
Ba2	12		BB	12
Ba3	13		BB-	13
<b>B</b> 1	14		<b>B</b> +	14
B2	15		B	15
B3	16		В-	16

# Value Line Risk Metrics

# Beta

A relative measure of the historical sensitivity of a stock's price to overall fluctuations in the New York Stock Exchange Composite Index. A beta of 1.50 indicates a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Index. The "coefficient" is derived from a regression analysis of the relationship between weekly percentage changes in the price of a stock and weekly percentage changes in the NYSE Index over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. Betas are adjusted for their long-term tendency to converge toward 1.00.

# **Financial Strength**

A relative measure of the companies reviewed by *Value Line*. The relative ratings range from A++ (strongest) down to C (weakest).

# Safety Rank

A measurement of potential risk associated with individual common stocks. The Safety Rank is computed by averaging two other *Value Line* indexes the Price Stability Index and the Financial strength Rating. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit their purchases to equities ranked 1 (Highest) and 2 (Above Average) for Safety.

# **Earnings Predictability**

A measure of the reliability of an earnings forecast. Earnings Predictability is based upon the stability of year-to-year comparisons, with recent years being weighted more heavily than earlier ones. The most reliable forecasts tend to be those with the highest rating (100); the least reliable, the lowest (5). The earnings stability is derived from the standard deviation of percentage changes in quarterly earnings over an eight-year period. Special adjustments are made for comparisons around zero and from plus to minus.

# **Stock Price Stability**

A measure of the stability of a stock's price. It includes sensitivity to the market (see Beta as well as the stock's inherent volatility. *Value Line's* Stability ratings range from 1 (highest) to 5 (lowest).

Source: Value Line Investment Analyzer.

# Docket No. 25-EKCE-294-RTS Exhibit JRW-4 Capital Structure and Debt Cost Rates Page 1 of 5

# Exhibit JRW-4

### Evergy Kansas Central, Inc. and Evergy Kansas South Inc.

Panel A									
EKC's Proposed Capital Structure and Debt Cost Rate									
	Cost								
<b>Capital Source</b>	Ratio	Rate							
Long-Term Debt	48.03%	4.641%							
<u>Common Equity</u>	<u>51.97%</u>								
Total	100.00%								

### Panel B

# EVRG and EKC Quarterly Capital Structure Ratios 2022-24

Including Short-Term Debt								
Capital Source	EKC	EVRG						
Short-Term Debt	8.1%	10.8%						
Long-Term Debt	43.1%	46.3%						
Common Equity	48.7%	<u>42.9%</u>						
Total Capital	100.0%	100.0%						

### **Excluding Short-Term Debt**

Capital Source	EKC	EVRG
Long-Term Debt	46.9%	51.9%
Common Equity	<u>53.1%</u>	<u>48.1%</u>
Total Capital	100.0%	100.0%

# Panel C

KC Adjusted Capital Structure and Weighted Cost of Long-Term Del

	Capitalization	Cost
Capital Source	Ratio	Rate
Adjusted Long-Term Debt	54.07%	4.650%
Common Equity	<u>45.93%</u>	<u>0.00%</u>
Total	100.00%	

# Panel D

# CURB's Proposed Capital Structure and Debt Cost Rate

	Capitalization	Cost
Capital Source	Ratio	Rate
Long-Term Debt	50.00%	4.650%
Common Equity	<u>50.00%</u>	
Total	100.00%	

Docket No. 25-EKCE-294-RTS Exhibit JRW-4 Capital Structure and Debt Cost Rates Page 2 of 5

### Exhibit No. JRW-4 Evergy Kansas Central, Inc. and Evergy Kansas South Inc. Quarterly Capital Structure Ratios

Evergy Kansas Central, Inc.

					00	,							
	2022 CQ1	2022 CQ2	2022 CQ3	2022 CQ4	2023 CQ1	2023 CQ2	2023 CQ3	2023 CQ4	2024 CQ1	2024 CQ2	2024 CQ3	2024 CQ4	
Short-Term Debt	626,300	946,500	888,200	1,007,100	558,000	985,800	860,200	396,400	443,500	764,600	906,700	1,279,000	
Long-Term Debt	3,934,900	3,885,600	3,886,300	3,886,900	4,281,400	4,281,700	4,282,400	4,580,400	4,581,000	4,581,800	4,582,700	4,404,700	
<b>Common Equity</b>	<u>4,591,600</u>	4,482,200	4,538,300	<u>4,507,400</u>	4,613,800	4,701,700	4,835,000	<u>4,891,900</u>	<u>5,003,500</u>	<u>5,128,000</u>	5,246,200	<u>5,284,900</u>	
Total Capital	9,152,800	9,314,300	9,312,800	9,401,400	9,453,200	9,969,200	9,977,600	9,868,700	10,028,000	10,474,400	10,735,600	10,968,600	
Total Capital (No S-T)	8,526,500	8,367,800	8,424,600	8,394,300	8,895,200	8,983,400	9,117,400	9,472,300	9,584,500	9,709,800	9,828,900	9,689,600	
	2022 CQ1	2022 CQ2	2022 CQ3	2022 CQ4	2023 CQ1	2023 CQ2	2023 CQ3	2023 CQ4	2024 CQ1	2024 CQ2	2024 CQ3	2024 CQ4	Average
Short-Term Debt	6.8%	10.2%	9.5%	10.7%	5.9%	9.9%	8.6%	4.0%	4.4%	7.3%	8.4%	11.7%	8.1%
Long-Term Debt	43.0%	41.7%	41.7%	41.3%	45.3%	42.9%	42.9%	46.4%	45.7%	43.7%	42.7%	40.2%	43.1%
<u>Common Equity</u>	<u>50.2%</u>	<u>48.1%</u>	<u>48.7%</u>	<u>47.9%</u>	<u>48.8%</u>	<u>47.2%</u>	<u>48.5%</u>	<u>49.6%</u>	<u>49.9%</u>	<u>49.0%</u>	<u>48.9%</u>	<u>48.2%</u>	<u>48.7%</u>
Total Capital	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	2022 CQ1	2022 CQ2	2022 CQ3	2022 CQ4	2023 CQ1	2023 CQ2	2023 CQ3	2023 CQ4	2024 CQ1	2024 CQ2	2024 CQ3	2024 CQ4	Average
	-	-	_	_	-	_	-	-	_	-	-	-	U
Long-Term Debt	46.1%	46.4%	46.1%	46.3%	48.1%	47.7%	47.0%	48.4%	47.8%	47.2%	46.6%	45.5%	46.9%
Common Equity	<u>53.9%</u>	<u>53.6%</u>	<u>53.9%</u>	<u>53.7%</u>	<u>51.9%</u>	<u>52.3%</u>	<u>53.0%</u>	<u>51.6%</u>	<u>52.2%</u>	<u>52.8%</u>	<u>53.4%</u>	<u>54.5%</u>	<u>53.1%</u>
Total Capital	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Data Source: S&P Capital IQ.

Docket No. 25-EKCE-294-RTS Exhibit JRW-4 Capital Structure and Debt Cost Rates Page 3 of 5

### Exhibit No. JRW-4 Evergy Kansas Central, Inc. and Evergy Kansas South Inc. Quarterly Capital Structure Ratios

Evergy, Inc.

						50 -							
	2022 CQ1	2022 CQ2	2022 CQ3	2022 CQ4	2023 CQ1	2023 CQ2	2023 CQ3	2023 CQ4	2024 CQ1	2024 CQ2	2024 CQ3	2024 CQ4	
Short-Term Debt	2,317,500	2,725,000	2,466,800	2,130,400	2,253,200	2,807,500	3,462,800	2,093,800	1,972,200	2,118,200	2,252,600	2,288,200	
Long-Term Debt	9,247,100	9,196,700	9,197,200	9,905,700	10,097,200	10,097,100	9,297,600	11,053,300	11,658,400	11,954,600	11,571,100	11,927,300	
Common Equity	<u>9,237,500</u>	<u>9,310,800</u>	<u>9,615,500</u>	<u>9,493,300</u>	<u>9,501,700</u>	<u>9,550,700</u>	<u>9,767,800</u>	<u>9,685,000</u>	<u>9,664,100</u>	<u>9,731,700</u>	<u>10,056,200</u>	<u>9,989,200</u>	
Total Capital	20,802,100	21,232,500	21,279,500	21,529,400	21,852,100	22,455,300	22,528,200	22,832,100	23,294,700	23,804,500	23,879,900	24,204,700	
Total Capital (No S-T)	18,484,600	18,507,500	18,812,700	19,399,000	19,598,900	19,647,800	19,065,400	20,738,300	21,322,500	21,686,300	21,627,300	21,916,500	
	2022 CQ1	2022 CQ2	2022 CQ3	2022 CQ4	2023 CQ1	2023 CQ2	2023 CQ3	2023 CQ4	2024 CQ1	2024 CQ2	2024 CQ3	2024 CQ4	Average
													_
Short-Term Debt	11.1%	12.8%	11.6%	9.9%	10.3%	12.5%	15.4%	9.2%	8.5%	8.9%	9.4%	9.5%	10.8%
Long-Term Debt	44.5%	43.3%	43.2%	46.0%	46.2%	45.0%	41.3%	48.4%	50.0%	50.2%	48.5%	49.3%	46.3%
Common Equity	<u>44.4%</u>	<u>43.9%</u>	<u>45.2%</u>	<u>44.1%</u>	<u>43.5%</u>	<u>42.5%</u>	<u>43.4%</u>	<u>42.4%</u>	<u>41.5%</u>	<u>40.9%</u>	<u>42.1%</u>	<u>41.3%</u>	<u>42.9%</u>
Total Capital	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	2022 CQ1	2022 CQ2	2022 CQ3	2022 CQ4	2023 CQ1	2023 CQ2	2023 CQ3	2023 CQ4	2024 CQ1	2024 CQ2	2024 CQ3	2024 CQ4	Average
													_
Long-Term Debt	50.0%	49.7%	48.9%	51.1%	51.5%	51.4%	48.8%	53.3%	54.7%	55.1%	53.5%	54.4%	51.9%
Common Equity	<u>50.0%</u>	<u>50.3%</u>	<u>51.1%</u>	<u>48.9%</u>	<u>48.5%</u>	<u>48.6%</u>	<u>51.2%</u>	<u>46.7%</u>	<u>45.3%</u>	<u>44.9%</u>	<u>46.5%</u>	<u>45.6</u> %	<u>48.1%</u>
Total Capital	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Data Source: S&P Capital IQ.

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# Exhibit JRW-4 Evergy Debt Issues 31-Dec-24

# Panel A

EVRG Debt Issues and Weighted Cost of Long-Term Debt

Bond Issue	Amount	Interest Rate	Weighted Cost
2.90% Series - Senior Notes due 2029	\$800,000,000	3.77%	\$30,160,000
4.50% Convertible Notes due 2027	\$1,400,000,000	4.50%	\$63,000,000
6.65% Junior Sub. Notes due 2055	<u>\$500,000,000</u>	6.65%	<u>\$33,250,000</u>
Total	\$2,700,000,000		\$126,410,000
Weighted Cost Rate			4.68%

Panel B EVRG Debt Issues and Weighted Cost of Long-Term Debt

Bond Issue	Amount	<b>Interest Rate</b>	Weighted Cost
Long-Term Debt	\$4,928,452,513	4.64%	\$228,729,481
Allocated EVRG Debt	<u>\$1,350,000,000</u>	4.68%	<u>\$63,205,000</u>
Total Debt	\$6,278,452,513		\$291,934,481
Weighted Cost of Long-Term Debt			4.65%

Panel C EKC Adjusted Capital Structure and Weighted Cost of Long-Term Debt

	Capitalization	Capitalization	Cost
Capital Source	Amount	Ratio	Rate
Adjusted Long-Term Debt	\$6,278,452,513	54.07%	4.65%
Common Equity	<u>\$5,332,530,551</u>	<u>45.93%</u>	
Total	\$11,610,983,064		

Panel D CURB Recommended Capital Structure

	1	
	Capitalization	Cost
Capital Source	Ratio	Rate
Long-Term Debt	50.00%	4.65%
Common Equity	<u>50.00%</u>	
Total		

# Exhibit JRW-4 Evergy Debt Issues 31-Dec-24

# 12. LONG-TERM DEBT

The Evergy Companies' long-term debt is detailed in the following tables

December 31-2024	Issuing Fatter	Dus	F	VALUE	P	Central		Evergy
Morivare Bonds	runnik runny	10.145	_		-	(mullions)	-	arresta se
1.152. Sarias	Everey Kanats Central Inc.	-9075	5	750.0	di.	150.0	6	-
7.65%, Seria	Sharpy Kansas Central Inc.	3026		150.0	1	150.0	N	~
\$ 105, Surias	Source Cantas Contral Inc	3027		300.0		300.0		_
5 003, Satiss	Every Kansas Central Inc	2011		366.0		300.0		
4.1355 5.400	Every Kansas Central Inc.	2041		-550.0		150.0		
d 102, Entras	Shiarat Fantas Contral Inc.	70.13		430.0		320.0		_
17.10 /a Belles	Evergy Mulsas Central Inc.	2042		450.0		430.0		-
LAD SALE	Every Converse Control Inc.	hista		200.0		200.0		
4.22% Fields	Every Kalisas Central Inc.	2040		300.0		100.0		
A LOS A DEGRES	Every Kansas Central Inc.	1042		100.0		100.0		
1 4014 36341	En ingy mansas c entral me.	2050		2000		500.0		
1 WAY DETER	Evergy Kanyas Central Inc.	200.2		-100.0		409.0		_
D.145Lattive.	going y realisate storith, the	2087		1/5.0		175.0		
0.04% Settes	Evergy Radias South Inc.	2035		100.0	-	100.0		
4,30% Series	Evergy Kansey Smub Inc.	2044		250.0		259.0		
1.25% Wertes	Every Meno Luc	2030		0.000		-		400.0
4.95% Series	Evergy Metro, Inc.	2033		300.0				300.0
5,40% Septes	Every Mere, Inc.	2034		300.0		-		300.0
4 125% Series	Evergy Merro Inc.	2049		400.0		-		400.0
119's Settes	Every Missneri West Inc	2027		100.0		-		
3 75% Settes	Evergy Missouri West, Inc.	2031		250.0		-		
5.60% - Setten	Every Missneri West Inc.	2014		300.0		-		-
Pollurion Courrol Bonds								
1 10 <sup>2</sup> Series	Every Kansay Central Inc.	3073		490		45.0		-
I 19% Veries	Everry Emerst Central Inc.	2012		10.5		10.5		-
210% Samac	Starsy Kanas South Inc	2027		71.0		21.0		
T 40% Bartin	Every Kawas South Inc	JDM		50.0		50.0		_
1 10% Series	Sugras Vankas South In-	-2012		1.04		14.5		= =
1 10% Sation =	Every Vanish's Joan Inc.	2012		10.0		100		
B LIN, Barrier 2002 C and BAATER	Course Manual South and	anie		100		10.0		1.102
1 TO A DELES 200/A ALL 200/A	Evergy Maro, Inc.	10.12		140.5		-		1400
1 30% ELECT. BOBIS	Every Medio Inc	4954		43 4				10.0
+ 10-2 WINK Bonds	EAMEA WHELE THE	2011		16.9		-		100.0
260000 240668	-	-		150 h				1000
1.00" + 34143	Evergy Metro, Inc.	2025		350,0		-		450,0
6 05" - Settes (5 78" - Inte)"	Evergy Metso Inc	2035		250.0		-		250.0
LA0% Settes	Evergy Metro, Inc.	2041		0.00		-		#0D.0
4 20% Betley	Evergy Merro, Inc.	2047		300.0		-		300.0
4.20%, Reties "	Evergy Merro, Inc.	2042		300.0		-		300.0
1.49% Tornes A."	Evergy Missouri West, Inc.	2025		76.0				
4.06% Series B"	Erergy Missouri West, Inc.	2033		60.0				
4,74% Series C."	Every Missner Wort Inc.	2043		150.0		-		-
2.86% Setias A'"	Evergy Missouri West Inc.	2041		350.0		-		-
1.01% Series B <sup>str</sup>	Evergy Missouri West Inc.	2013		75.0		-		-
1.22% Seties T	Every Missouri West Inc.	2030		-75.0		-		-
2.90*, Series (3.77*, rate)	Everyy Inc.	2029		200 0		-		_
Contertible Notes	a setting	1						
+ 50% Convertible Notes	Everey, Inc.	3027		1.400.0		-		-
herminged Room	files ( the							
and the second second	Fourse Missieri Wast	1031						
5.10% Securitized Bonds	Storm Funding   LLC	2040		319.6	1	-		-
Jumary Tubordinated Notes	the second second second	201						
6 67 , hundr Salaardinaied Noral	Everey Inc.	1055		500.0		-		-
Fan value administration	0.1.41.	Gene		11.7		-		
Current maturities				(651.3)		7350.01		/150 M
Thompstingd date discount and Asia in	states esti			ALLET	1	142.43		(35.8)
commentation of the surface and class to	Comment and a			11 000 1	*	1 1 1 1 1	-	144.01

# Evergy Kansas Central, Inc. and Evergy Kansas South Inc. Discounted Cash Flow Analysis

Panel A

Electric Proxy Group						
Dividend Yield*	3.40%					
Adjustment Factor	<u>1.0315</u>					
Adjusted Dividend Yield	3.51%					
Growth Rate**	<u>6.30%</u>					
Equity Cost Rate	9.80%					

\* Page 2 of Exhibit JRW-5

\*\* Based on data provided on pages 3, 4, 5, and

6 of Exhibit JRW-5

\*\*\* DCF ROE rounded to nearest 0.05%.

# Panel B

# **Bulkley Proxy Group**

Dividend Yield*	3.30%
Adjustment Factor	<u>1.031</u>
Adjusted Dividend Yield	3.40%
Growth Rate**	<u>6.20%</u>
Equity Cost Rate	9.60%

\* Page 2 of Exhibit JRW-5

\*\* Based on data provided on pages 3, 4, 5, and 6 of Exhibit JRW-5

\*\*\* DCF ROE rounded to nearest 0.05%.

### Evergy Kansas Central, Inc. and Evergy Kansas South Inc. Monthly Dividend Yields

Panel A Electric Proxy Group

			Dividend	Dividend	Dividend
		Annual	Yield	Yield	Yield
Company		Dividend	30 Day	90 Day	180 Day
Alliant Energy Corporation (NYSE-LNT)	LNT	\$1.92	3.1%	3.1%	3.2%
Ameren Corporation (NYSE-AEE)	AEE	\$2.68	2.7%	2.8%	2.9%
American Electric Power Co. (NYSE-AEP)	AEP	\$3.52	3.3%	3.4%	3.5%
Avista Corporation (NYSE-AVA)	AVA	\$1.90	4.7%	4.9%	4.9%
CenterPoint Energy, Inc. (NYSE-CNP)	CNP	\$0.80	2.1%	2.3%	2.4%
CMS Energy Corporation (NYSE-CMS)	CMS	\$2.06	2.9%	2.9%	2.9%
Consolidated Edison, Inc. (NYSE-ED)	ED	\$3.32	3.1%	3.2%	3.3%
Dominion Resources, Inc. (NYSE-D)	D	\$2.67	4.9%	4.9%	4.8%
DTE Energy Company (NYSE-DTE)	DTE	\$4.08	3.0%	3.1%	3.2%
Duke Energy Corporation (NYSE-DUK)	DUK	\$4.10	3.4%	3.5%	3.6%
Edison International (NYSE-EIX)	EIX	\$3.12	5.5%	5.6%	4.5%
Entergy Corporation (NYSE-ETR)	ETR	\$2.26	2.7%	2.7%	3.0%
Evergy, Inc. (NYSE-EVRG)	EVRG	\$2.57	3.8%	3.9%	4.0%
Eversource Energy (NYSE-ES)	ES	\$2.86	4.8%	4.8%	4.6%
Exelon Corporation (NYSE-EXC)	EXC	\$1.52	3.3%	3.5%	3.7%
FirstEnergy Corp. (NYSE-FE)	FE	\$1.70	4.1%	4.2%	4.1%
IDACORP, Inc. (NYSE-IDA)	IDA	\$3.32	2.9%	2.9%	3.0%
NextEra Energy, Inc. (NYSE-NEE)	NEE	\$2.06	3.0%	3.0%	2.8%
NorthWestern Corporation (NYSE-NWE)	NWE	\$2.60	4.5%	4.7%	4.7%
OGE Energy Corp. (NYSE-OGE)	OGE	\$1.67	3.8%	3.8%	3.9%
Pinnacle West Capital Corp. (NYSE-PNW)	PNW	\$3.52	3.8%	3.9%	3.9%
Portland General Electric Company (NYSE-P	POR	\$2.00	4.7%	4.7%	4.5%
PPL Corporation (NYSE-PPL)	PPL	\$1.03	2.9%	3.0%	3.1%
Public Service Enterprise Gp. Inc. (NYSE-PE	PEG	\$2.40	3.0%	2.9%	2.8%
Southern Company (NYSE-SO)	SO	\$2.88	3.2%	3.3%	3.3%
WEC Energy Group (NYSE-WEC)	WEC	\$3.34	3.1%	3.2%	3.3%
Xcel Energy Inc. (NYSE-XEL)	XEL	\$2.19	3.1%	3.2%	3.2%
Mean			3.5%	3.6%	3.6%
Median			3.2%	3.3%	3.3%

Data Sources: S&P Cap IQ., May 20, 2025.

Panel B Bulkley Proxy Group

	Junitey 110	xy Group			
			Dividend	Dividend	Dividend
		Annual	Yield	Yield	Yield
Company		Dividend	30 Day	90 Day	180 Day
Alliant Energy Corporation (NYSE-LNT)	LNT	\$1.92	3.1%	3.1%	3.2%
Ameren Corporation (NYSE-AEE)	AEE	\$2.68	2.7%	2.8%	2.9%
American Electric Power Co. (NYSE-AEP)	AEP	\$3.52	3.3%	3.4%	3.5%
Avista Corporation (NYSE-AVA)	AVA	\$1.90	4.7%	4.9%	4.9%
CMS Energy Corporation (NYSE-CMS)	CMS	\$2.06	2.9%	2.9%	2.9%
DTE Energy Company (NYSE-DTE)	DTE	\$4.08	3.0%	3.1%	3.2%
Duke Energy Corporation (NYSE-DUK)	DUK	\$4.10	3.4%	3.5%	3.6%
Entergy Corporation (NYSE-ETR)	ETR	\$2.26	2.7%	2.7%	3.0%
IDACORP, Inc. (NYSE-IDA)	IDA	\$3.32	2.9%	2.9%	3.0%
NextEra Energy, Inc. (NYSE-NEE)	NEE	\$2.06	3.0%	3.0%	2.8%
NorthWestern Corporation (NYSE-NWE)	NWE	\$2.60	4.5%	4.7%	4.7%
OGE Energy Corp. (NYSE-OGE)	OGE	\$1.67	3.8%	3.8%	3.9%
Pinnacle West Capital Corp. (NYSE-PNW)	PNW	\$3.52	3.8%	3.9%	3.9%
Portland General Electric Company (NYSE-P	POR	\$2.00	4.7%	4.7%	4.5%
PPL Corporation (NYSE-PPL)	PPL	\$1.03	2.9%	3.0%	3.1%
Southern Company (NYSE-SO)	SO	\$2.88	3.2%	3.3%	3.3%
Xcel Energy Inc. (NYSE-XEL)	XEL	\$2.19	3.1%	3.2%	3.2%
Mean			3.4%	3.5%	3.5%
Median			3.1%	3.2%	3.2%

Data Sources: S&P Cap IQ., May 20, 2025.

### Evergy Kansas Central, Inc. and Evergy Kansas South Inc. DCF Equity Cost Growth Rate Measures *Value Line* Historic Growth Rates

Panel A

		Electric Proxy Group						
				Value Line Hi	storic Growtl	Past 5 Years   Past 5 Years   Earnings Dividends E   4.5 6.0 8.0 5.0   4.0 5.0 - -   4.0 5.0 - -   -1.0 4.0 5.0 -   -1.0 4.0 5.0 -   -1.0 4.0 0 -   -1.0 4.0 5.0 -   -5.5 -4.5 - -   -5.5 -4.5 - -   3.5 2.5 1 - -   -5.5 -4.5 - - -   4.0 4.0 - - - - -   -0.5 0.5 11.0 -		
	Company		Past 10 Years	8		Past 5 Years		
		Earnings	Dividends	Book Value	Earnings	Dividends	Book Value	
Alliant Energy Cor	Alliant Energy Corporation (NYSE-LNT)	5.5	6.5	6.0	4.5	6.0	6.0	
Ameren Corporatio	Ameren Corporation (NYSE-AEE)	4.0	3.5	2.0	8.0	5.0	5.5	
American Electric I	American Electric Power Co. (NYSE-AEP)	5.0	5.0	3.5	4.0	5.0	3.5	
<b>Avista Corporation</b>	Avista Corporation (NYSE-AVA)	3.0	4.0	3.5	-1.0	4.0	3.0	
CenterPoint Energy	CenterPoint Energy, Inc. (NYSE-CNP)		-1.0	4.0	3.5	-9.5	7.0	
CMS Energy Corpo	CMS Energy Corporation (NYSE-CMS)	6.5	6.5	7.0	6.0	6.5	8.5	
<b>Consolidated Ediso</b>	Consolidated Edison, Inc. (NYSE-ED)	3.0	3.0	4.0	3.0	2.5	3.0	
<b>Dominion Resource</b>	Dominion Resources, Inc. (NYSE-D)		1.5	5.0	-5.5	-4.5	0.5	
DTE Energy Comp	DTE Energy Company (NYSE-DTE)	4.0	5.5	3.0	2.5	5.5	1.5	
Duke Energy Corpo	Duke Energy Corporation (NYSE-DUK)	3.5	3.0	0.5	3.5	2.5	0.5	
<b>Edison Internationa</b>	Edison International (NYSE-EIX)	1.0	8.0	1.5	12.5	4.5	0.5	
Entergy Corporatio	Entergy Corporation (NYSE-ETR)	2.5	2.5	2.0	4.0	4.0	7.0	
Evergy, Inc. (NYSE	Evergy, Inc. (NYSE-EVRG)							
<b>Eversource Energy</b>	Eversource Energy (NYSE-ES)	6.5	6.5	3.5	6.0	6.0	3.0	
<b>Exelon Corporation</b>	Exelon Corporation (NDW-EXC)	-0.5	-3.0	4.5	2.5	4.0	3.5	
FirstEnergy Corp.	FirstEnergy Corp. (NYSE-FE)		-1.0	-4.5	-0.5	0.5	10.5	
IDACORP, Inc. (N	IDACORP, Inc. (NYSE-IDA)	4.0	7.5	4.5	3.5	6.0	4.5	
NextEra Energy, In	Nextera Energy, Inc. (NYSE-NEE)	9.5	11.0	8.0	12.5	11.0	5.5	
NorthWestern Corp	NorthWestern Corporation (NYSE-NWE)	2.5	5.5	5.0	-1.0	3.0	3.5	
OGE Energy Corp.	OGE Energy Corp. (NYSE-OGE)	3.0	7.5	4.0	4.5	8.5	1.5	
Pinnacle West Capi	Pinnacle West Capital Corp. (NYSE-PNW)	2.5	4.0	4.0		4.0	3.5	
<b>Portland General E</b>	Portland General Electric Company (NYSE-POR)	3.5	5.5	3.5	3.0	5.5	3.0	
<b>PPL Corporation (</b>	PPL Corporation (NYSE-PPL)	-9.0	-1.0		-17.0	-4.5	4.0	
<b>Public Service Ente</b>	Public Service Enterprise Gp. Inc. (NYSE-PEG)	3.0	4.5	3.0	3.0	5.0	1.0	
Southern Company	Southern Company (NYSE-SO)	3.0	3.5	3.0	3.0	3.5	2.5	
WEC Energy Grou	WEC Energy Group (NYSE-WEC)	6.5	10.0	7.0	7.0	6.5	3.5	
Xcel Energy Inc. (N	Xcel Energy Inc. (NYSE-XEL)	5.5	6.5	5.5	6.0	6.5	6.0	
	Mean	3.4	4.4	3.7	3.1	3.7	3.9	
	Median	3.5	4.8	4.0	3.5	4.8	3.5	
	Data Source: Value Line Investment Survey.	Average of M	ledian Figure	s =	4.0			

	]	Bulkley Proxy Group						
				Value Line Hi	storic Growtl	ı		
	Company		Past 10 Years	5		Past 5 Years		
		Earnings	Dividends	Book Value	Earnings	Dividends	Book Value	
Alliant Energy Cor	Alliant Energy Corporation (NYSE-LNT)	5.5	6.5	6.0	4.5	6.0	6.0	
Ameren Corporatio	Ameren Corporation (NYSE-AEE)	4.0	3.5	2.0	8.0	5.0	5.5	
American Electric l	American Electric Power Co. (NYSE-AEP)	5.0	5.0	3.5	4.0	5.0	3.5	
Avista Corporation	Avista Corporation (NYSE-AVA)	3.0	4.0	3.5	-1.0	4.0	3.0	
CMS Energy Corpo	CMS Energy Corporation (NYSE-CMS)	6.5	6.5	7.0	6.0	6.5	8.5	
DTE Energy Comp	DTE Energy Company (NYSE-DTE)	4.0	5.5	3.0	2.5	5.5	1.5	
Duke Energy Corpo	Duke Energy Corporation (NYSE-DUK)	3.5	3.0	0.5	3.5	2.5	0.5	
Entergy Corporatio	Entergy Corporation (NYSE-ETR)	2.5	2.5	2.0	4.0	4.0	7.0	
IDACORP, Inc. (N	IDACORP, Inc. (NYSE-IDA)	4.0	7.5	4.5	3.5	6.0	4.5	
NextEra Energy, In	Nextera Energy, Inc. (NYSE-NEE)	9.5	11.0	8.0	12.5	11.0	5.5	
NorthWestern Cor	NorthWestern Corporation (NYSE-NWE)	2.5	5.5	5.0	-1.0	3.0	3.5	
OGE Energy Corp.	OGE Energy Corp. (NYSE-OGE)	3.0	7.5	4.0	4.5	8.5	1.5	
Pinnacle West Capi	Pinnacle West Capital Corp. (NYSE-PNW)	2.5	4.0	4.0		4.0	3.5	
Portland General E	Portland General Electric Company (NYSE-POR)	3.5	5.5	3.5	3.0	5.5	3.0	
PPL Corporation (	PPL Corporation (NYSE-PPL)	-9.0	-1.0		-17.0	-4.5	4.0	
Southern Company	Southern Company (NYSE-SO)	3.0	3.5	3.0	3.0	3.5	2.5	
Xcel Energy Inc. (N	Xcel Energy Inc. (NYSE-XEL)	5.5	6.5	5.5	6.0	6.5	6.0	
	Mean	3.4	5.1	4.1	2.9	4.8	4.1	
	Median	3.5	5.5	3.8	3.8	5.0	3.5	
	Data Source: Value Line Investment Survey.	Average of M	ledian Figure	s =	4.2			

# Panel B

### Evergy Kansas Central, Inc. and Evergy Kansas South Inc. DCF Equity Cost Growth Rate Measures Value Line Projected Growth Rates

Panel A

Flactric	Provv	Crown
Electric	I I UAY	Group

	Value Line		Value Line			
	Projected Growth		S	ustainable Grow	vth	
Company	Est'd. '22-'24 to '28-'30		Return on	Retention	Internal	
	Earnings	Dividends	Book Value	Equity	Rate	Growth
Alliant Energy Corporation (NYSE-LNT)	6.0	6.0	4.0	12.0%	38.0%	4.6%
Ameren Corporation (NYSE-AEE)	6.5	6.5	6.5	10.0%	40.0%	4.0%
American Electric Power Co. (NYSE-AEP)	6.5	5.5	6.0	11.0%	39.0%	4.3%
Avista Corporation (NYSE-AVA)	5.5	4.0	2.0	8.0%	24.0%	1.9%
CenterPoint Energy, Inc. (NYSE-CNP)	6.5	6.0	5.5	10.5%	51.0%	5.4%
CMS Energy Corporation (NYSE-CMS)	6.0	5.0	5.0	13.5%	40.0%	5.4%
Consolidated Edison, Inc. (NYSE-ED)	6.0	4.5	4.0	9.0%	40.0%	3.6%
Dominion Resources, Inc. (NYSE-D)	6.0	0.0	3.0	11.5%	37.0%	4.3%
DTE Energy Company (NYSE-DTE)	4.5	3.0	1.0	12.5%	38.0%	4.8%
Duke Energy Corporation (NYSE-DUK)	6.0	3.5	3.5	10.5%	37.0%	3.9%
Edison International (NYSE-EIX)	6.5	6.0	6.0	14.0%	36.0%	5.0%
Entergy Corporation (NYSE-ETR)	3.0	5.5	4.5	9.5%	39.0%	3.7%
Evergy, Inc. (NYSE-EVRG)	7.5	7.0	3.5	10.0%	37.0%	3.7%
Eversource Energy (NYSE-ES)	5.5	5.5	3.5	11.5%	37.0%	4.3%
Exelon Corporation (NDW-EXC)	nmf	nmf	nmf	10.0%	40.0%	4.0%
FirstEnergy Corp. (NYSE-FE)	4.5	4.5	5.5	12.5%	37.0%	4.6%
IDACORP, Inc. (NYSE-IDA)	6.0	5.5	4.5	9.5%	41.0%	3.9%
Nextera Energy, Inc. (NYSE-NEE)	8.5	9.5	8.0	14.0%	37.0%	5.2%
NorthWestern Corporation (NYSE-NWE)	4.5	1.5	2.5	8.0%	35.0%	2.8%
OGE Energy Corp. (NYSE-OGE)	6.5	3.0	5.5	13.0%	30.0%	3.9%
Pinnacle West Capital Corp. (NYSE-PNW)	5.0	1.5	4.0	9.0%	39.0%	3.5%
Portland General Electric Company (NYSE-POR)	6.5	5.5	4.5	9.5%	35.0%	3.3%
PPL Corporation (NYSE-PPL)	7.5	-0.5	3.0	9.5%	40.0%	3.8%
Public Service Enterprise Gp. Inc. (NYSE-PEG)	7.0	6.0	5.5	12.5%	39.0%	4.9%
Southern Company (NYSE-SO)	6.5	3.5	3.5	14.5%	33.0%	4.8%
WEC Energy Group (NYSE-WEC)	6.0	7.0	4.0	13.0%	36.0%	4.7%
Xcel Energy Inc. (NYSE-XEL)	7.0	6.5	5.5	11.0%	40.0%	4.4%
Mean	6.1	4.7	4.4	11.1%	37.6%	4.2%
Median	6.0	5.5	4.3	11.0%	38.0%	4.3%
Average of Median Figures =		5.3			Median =	4.3%

\* 'Est'd. '22-'24 to '28-'30 is the estimated growth rate from the base period 2023 to 2024 until the future period 2028 to 2030.

Data Source: Value Line Investment Survey.

### Panel B

	Bulkley	Proxy Group					
		Value Line	•	Value Line			
		Projected Growth		Sustainable Growth			
Company	Est'	d. '22-'24 to '2	8-'30	Return on	Retention	Internal	
	Earnings	Dividends	Book Value	Equity	Rate	Growth	
Alliant Energy Corporation (NYSE-LNT)	6.0	6.0	4.0	12.0%	38.0%	4.6%	
Ameren Corporation (NYSE-AEE)	6.5	6.5	6.5	10.0%	40.0%	4.0%	
American Electric Power Co. (NYSE-AEP)	6.5	5.5	6.0	11.0%	39.0%	4.3%	
Avista Corporation (NYSE-AVA)	5.5	4.0	2.0	8.0%	24.0%	1.9%	
CMS Energy Corporation (NYSE-CMS)	6.0	5.0	5.0	13.5%	40.0%	5.4%	
DTE Energy Company (NYSE-DTE)	4.5	3.0	1.0	12.5%	38.0%	4.8%	
Duke Energy Corporation (NYSE-DUK)	6.0	3.5	3.5	10.5%	37.0%	3.9%	
Entergy Corporation (NYSE-ETR)	3.0	5.5	4.5	9.5%	39.0%	3.7%	
IDACORP, Inc. (NYSE-IDA)	6.0	5.5	4.5	9.5%	41.0%	3.9%	
Nextera Energy, Inc. (NYSE-NEE)	8.5	9.5	8.0	14.0%	37.0%	5.2%	
NorthWestern Corporation (NYSE-NWE)	4.5	1.5	2.5	8.0%	35.0%	2.8%	
OGE Energy Corp. (NYSE-OGE)	6.5	3.0	5.5	13.0%	30.0%	3.9%	
Pinnacle West Capital Corp. (NYSE-PNW)	5.0	1.5	4.0	9.0%	39.0%	3.5%	
Portland General Electric Company (NYSE-POR)	6.5	5.5	4.5	9.5%	35.0%	3.3%	
PPL Corporation (NYSE-PPL)	7.5	-0.5	3.0	9.5%	40.0%	3.8%	
Southern Company (NYSE-SO)	6.5	3.5	3.5	14.5%	33.0%	4.8%	
Xcel Energy Inc. (NYSE-XEL)	7.0	6.5	5.5	11.0%	40.0%	4.4%	
Mean	6.0	4.4	4.3	10.9%	36.8%	4.0%	
Median	6.0	5.0	4.5	10.5%	38.0%	3.9%	
Average of Median Figures =		5.2			Median =	3.9%	

\* 'Est'd. '22-'24 to '28-'30 is the estimated growth rate from the base period 2023 to 2024 until the future period 2028 to 2030.

Data Source: Value Line Investment Survey.

### Evergy Kansas Central, Inc. and Evergy Kansas South Inc. DCF Equity Cost Growth Rate Measures Analysts Projected EPS Growth Rate Estimates

Panel A

I	Electric Pr	oxy Group			
Company		Yahoo	Zacks	S&P	Mean
Alliant Energy Corporation (NYSE-LNT)	LNT	7.8%	6.7%	6.5%	7.0%
Ameren Corporation (NYSE-AEE)	AEE	8.1%	7.0%	7.0%	7.3%
American Electric Power Co. (NYSE-AEP)	AEP	11.2%	6.4%	6.8%	8.1%
Avista Corporation (NYSE-AVA)	AVA	5.5%	6.1%	6.0%	5.9%
CenterPoint Energy, Inc. (NYSE-CNP)	CNP	10.0%	7.8%	8.0%	8.6%
CMS Energy Corporation (NYSE-CMS)	CMS	8.3%	7.8%	7.3%	7.8%
Consolidated Edison, Inc. (NYSE-ED)	ED	2.1%	5.6%	5.8%	4.5%
Dominion Resources, Inc. (NYSE-D)	D	8.4%	13.6%	11.4%	11.1%
DTE Energy Company (NYSE-DTE)	DTE	9.0%	7.6%	7.5%	8.1%
Duke Energy Corporation (NYSE-DUK)	DUK	7.2%	6.3%	6.4%	6.6%
Edison International (NYSE-EIX)	EIX	15.2%	7.0%	8.6%	10.3%
Entergy Corporation (NYSE-ETR)	ETR	2.5%	9.5%	9.1%	7.0%
Evergy, Inc. (NYSE-EVRG)	EVRG	NA	5.7%	5.7%	5.7%
Eversource Energy (NYSE-ES)	ES	6.2%	5.7%	5.6%	5.8%
Exelon Corporation (NDW-EXC)	EXC	6.5%	6.4%	6.4%	6.4%
FirstEnergy Corp. (NYSE-FE)	FE	11.5%	6.4%	6.1%	8.0%
IDACORP, Inc. (NYSE-IDA)	IDA	9.0%	8.1%	8.1%	8.4%
Nextera Energy, Inc. (NYSE-NEE)	NEE	5.3%	7.7%	7.7%	6.9%
NorthWestern Corporation (NYSE-NWE)	NWE	6.0%	6.9%	5.8%	6.2%
OGE Energy Corp. (NYSE-OGE)	OGE	4.6%	6.3%	6.5%	5.8%
Pinnacle West Capital Corp. (NYSE-PNW)	PNW	6.1%	2.1%	4.8%	4.3%
Portland General Electric Company (NYSE-	<b>POR</b>	9.3%	3.4%	4.8%	5.8%
PPL Corporation (NYSE-PPL)	PPL	14.5%	7.5%	7.4%	9.8%
Public Service Enterprise Group Incorporate	PEG	2.4%	6.8%	6.6%	5.3%
Southern Company (NYSE-SO)	SO	6.9%	6.6%	6.1%	6.5%
WEC Energy Group (NYSE-WEC)	WEC	7.8%	7.0%	7.0%	7.3%
Xcel Energy Inc. (NYSE-XEL)	XEL	8.1%	7.5%	7.8%	7.8%
Mean		7.7%	6.9%	6.9%	7.1%
Median		7.8%	6.8%	6.6%	7.0%

Data Sources: www.zacks.com, http://quote.yahoo.com, S&P Cap IQ, May 20, 2025.

### Panel B

В	sulkiey Pr	oxy Group			
Company		Yahoo	Zacks	S&P	Mean
Alliant Energy Corporation (NYSE-LNT)	LNT	7.8%	6.7%	6.5%	7.0%
Ameren Corporation (NYSE-AEE)	AEE	8.1%	7.0%	7.0%	7.3%
American Electric Power Co. (NYSE-AEP)	AEP	11.2%	6.4%	6.8%	8.1%
Avista Corporation (NYSE-AVA)	AVA	5.5%	6.1%	6.0%	5.9%
CMS Energy Corporation (NYSE-CMS)	CMS	8.3%	7.8%	7.3%	7.8%
DTE Energy Company (NYSE-DTE)	DTE	9.0%	7.6%	7.5%	8.1%
Duke Energy Corporation (NYSE-DUK)	DUK	7.2%	6.3%	6.4%	6.6%
Entergy Corporation (NYSE-ETR)	ETR	2.5%	9.5%	9.1%	7.0%
IDACORP, Inc. (NYSE-IDA)	IDA	9.0%	8.1%	8.1%	8.4%
Nextera Energy, Inc. (NYSE-NEE)	NEE	5.3%	7.7%	7.7%	6.9%
NorthWestern Corporation (NYSE-NWE)	NWE	6.0%	6.9%	5.8%	6.2%
OGE Energy Corp. (NYSE-OGE)	OGE	4.6%	6.3%	6.5%	5.8%
Pinnacle West Capital Corp. (NYSE-PNW)	PNW	6.1%	2.1%	4.8%	4.3%
Portland General Electric Company (NYSE-l	POR	9.3%	3.4%	4.8%	5.8%
PPL Corporation (NYSE-PPL)	PPL	14.5%	7.5%	7.4%	9.8%
Southern Company (NYSE-SO)	SO	6.9%	6.6%	6.1%	6.5%
Xcel Energy Inc. (NYSE-XEL)	XEL	8.1%	7.5%	7.8%	7.8%
Mean		7.6%	6.7%	6.8%	7.0%
Median		7.8%	6.9%	6.8%	7.0%

Data Sources: www.zacks.com, http://quote.yahoo.com, S&P Cap IQ, May 20, 2025.

# Evergy Kansas Central, Inc. and Evergy Kansas South Inc. DCF Growth Rate Indicators

Growth Rate Indicator	Electric Proxy Group	<b>Bulkley Proxy Group</b>
Historic <i>Value Line</i> Growth		
in EPS, DPS, and BVPS	4.0%	4.2%
Projected Value Line Growth		
in EPS, DPS, and BVPS	5.3%	5.2%
Sustainable Growth		
ROE * Retention Rate	4.3%	3.9%
Projected EPS Growth from Yahoo, Zacks,		
and S&P Cap IQ - Mean/Median	7.0%/7.1%	7.0%/7.0%
DCF Growth Rate	6.30%	6.20%
DCF Gro	owth Rate Summary	
DCF Growth Rate	<b>Electric Proxy Group</b>	<b>Bulkley Proxy Group</b>
Projected Value Line Growth	5.3%	5.2%
Sustainable Growth	4.3%	3.9%
Projected EPS Growth	<u>7.1%</u>	<u>7.0%</u>
Projected Growth Average	5.5%	5.4%
Projected EPS Growth	<u>7.1%</u>	<u>7.0%</u>
DCF Growth Rate	6.3%	6.2%

# Evergy Kansas Central, Inc. and Evergy Kansas South Inc. Capital Asset Pricing Model

Panel A
Electric Proxy Group***

Risk-Free Interest Rate	5.00%
Beta*	<b>#NAME?</b>
Ex Ante Market Risk Premium**	<u>5.25%</u>
CAPM Cost of Equity	9.00%

\* See page 3 of Exhibit JRW-6

\*\* See pages 5 and 6 of Exhibit JRW-6

\*\*\* CAPM ROE rounded to nearest 0.05%.

Panel B	
Bulkley Proxy Group***	*

Risk-Free Interest Rate	5.00%
Beta*	0.74
Ex Ante Market Risk Premium**	<u>5.25%</u>
CAPM Cost of Equity	8.85%

\* See page 3 of Exhibit JRW-6

\*\* See pages 5 and 6 of Exhibit JRW-6

\*\*\* CAPM ROE rounded to nearest 0.05%.



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Panel A					
Electric Proxy Group					
	V-Line	Cap IQ	Average		
Company	Beta	Beta	Beta		
Alliant Energy Corporation (NYSE-LNT)	0.95	0.72	0.83		
Ameren Corporation (NYSE-AEE)	0.90	0.68	0.79		
American Electric Power Co. (NYSE-AEP)	0.85	0.62	0.74		
Avista Corporation (NYSE-AVA)	0.75	0.60	0.67		
CenterPoint Energy, Inc. (NYSE-CNP)	1.10	0.74	0.92		
CMS Energy Corporation (NYSE-CMS)	0.85	0.60	0.73		
Consolidated Edison, Inc. (NYSE-ED)	0.65	0.51	0.58		
Dominion Resources, Inc. (NYSE-D)	0.75	0.71	0.73		
DTE Energy Company (NYSE-DTE)	1.00	0.64	0.82		
Duke Energy Corporation (NYSE-DUK)	0.70	0.58	0.64		
Edison International (NYSE-EIX)	0.90	0.85	0.87		
Entergy Corporation (NYSE-ETR)	1.00	0.73	0.87		
Evergy, Inc. (NYSE-EVRG)	0.95	0.67	0.81		
Eversource Energy (NYSE-ES)	0.95	0.75	0.85		
Exelon Corporation (NDW-EXC)	NMF	0.67	0.67		
FirstEnergy Corp. (NYSE-FE)	0.75	0.60	0.67		
IDACORP, Inc. (NYSE-IDA)	0.75	0.72	0.73		
NextEra Energy, Inc. (NYSE-NEE)	0.90	0.79	0.84		
NorthWestern Corporation (NYSE-NWE)	0.80	0.61	0.71		
OGE Energy Corp. (NYSE-OGE)	1.05	0.74	0.89		
Pinnacle West Capital Corp. (NYSE-PNW)	0.80	0.63	0.72		
Portland General Electric Company (NYSE-POR)	0.80	0.73	0.76		
PPL Corporation (NYSE-PPL)	0.90	0.81	0.86		
Public Service Enterprise Group Incorporated (NYSE -	0.90	0.66	0.78		
Southern Company (NYSE-SO)	0.75	0.58	0.67		
WEC Energy Group (NYSE-WEC)	0.90	0.63	0.77		
Xcel Energy Inc. (NYSE-XEL)	0.75	0.60	0.67		
Mean	0.87	0.67	0.77		
Median	0.88	0.67	0.76		

Data Source: Value Line Investment Survey, 2025; S&P Cap IQ, 2025.

Panel B

Bulkley Proxy Group				
	V-Line	Cap IQ	Average	
Company	Beta	Beta	Beta	
Alliant Energy Corporation (NYSE-LNT)	0.95	0.72	0.83	
Ameren Corporation (NYSE-AEE)	0.90	0.68	0.79	
American Electric Power Co. (NYSE-AEP)	0.85	0.62	0.74	
Avista Corporation (NYSE-AVA)	0.75	0.60	0.67	
CMS Energy Corporation (NYSE-CMS)	0.85	0.60	0.73	
DTE Energy Company (NYSE-DTE)	1.00	0.64	0.82	
Duke Energy Corporation (NYSE-DUK)	0.70	0.58	0.64	
Entergy Corporation (NYSE-ETR)	1.00	0.73	0.87	
IDACORP, Inc. (NYSE-IDA)	0.75	0.72	0.73	
NextEra Energy, Inc. (NYSE-NEE)	0.90	0.79	0.84	
NorthWestern Corporation (NYSE-NWE)	0.80	0.61	0.71	
OGE Energy Corp. (NYSE-OGE)	1.05	0.74	0.89	
Pinnacle West Capital Corp. (NYSE-PNW)	0.80	0.63	0.72	
Portland General Electric Company (NYSE-POR)	0.80	0.73	0.76	
PPL Corporation (NYSE-PPL)	0.90	0.81	0.86	
Southern Company (NYSE-SO)	0.75	0.58	0.67	
Xcel Energy Inc. (NYSE-XEL)	0.75	0.60	0.67	
Mean	0.86	0.65	0.76	
Median	0.88	0.64	0.74	

Data Source: Value Line Investment Survey, 2025; S&P Cap 1Q, 2025.

Exhibit JRW-6
Risk Premium Approaches

	Historical Ex Post Returns	Surveys	Expected Return Models and Market Data
Means of Assessing	Historical Average	Surveys of CFOs,	Use Market Prices and
The Market Risk	Stock Minus	Financial Forecasters,	Market Fundamentals (such as
Premium	Bond Returns	Companies, Analysts on	Growth Rates) to Compute
		Expected Returns and	Expected Returns and Market
		Market Risk Premiums	Risk Premiums
Problems/Debated	Time Variation in	Questions Regarding Survey	Assumptions Regarding
Issues	Required Returns,	Histories, Responses, and	Expectations, Especially
	Measurement and	Representativeness	Growth
	Time Period Issues,		
	and Biases such as	Surveys may be Subject	
	Market and Company	to Biases, such as	
	Survivorship Bias	Extrapolation	

Source: Adapted from Antti Ilmanen, Expected Returns on Stocks and Bonds," Journal of Portfolio Management, (Winter 2003).

### CAPM Study

	Market Risk Premium - 2000-2024										
			Publication	Time Period		Return	Rar	ıge	Midpoint		Median
Category	Category	Study Authors	Date	Of Study	Methodology	Measure	Low	High	of Range	Mean	
Historical Ris	Historical Risk	x Premium									
		Ibbotson	2016	1928-2015	Historical Stock Returns - Bond Returns	Arithmetic				6.00%	
						Geometric				4.40%	
		Damodaran	2024	1928-2023	Historical Stock Returns - Bond Returns	Arithmetic				6.80%	
						Geometric				5.23%	
		Dimson, Marsh, Staunton _Credit Suisse Report	2025	1900-2024	Historical Stock Returns - Bond Returns	Geometric				5.10%	
		Bate	2008	1900-2007	Historical Stock Returns - Bond Returns	Geometric				4.50%	
		Shiller	2006	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				7.00%	
						Geometric				5.50%	
		Siegel	2005	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				6.10%	
						Geometric				4.60%	
		Dimson, Marsh, and Staunton	2006	1900-2005	Historical Stock Returns - Bond Returns	Arithmetic				5.50%	
		Goyal & Welch	2006	1872-2004	Historical Stock Returns - Bond Returns	Geometric				4.77%	
		Median									5.37%
Ex Ante Mode	Ex Ante Mode	ls (Puzzle Research)									
		Claus Thomas	2001	1985-1998	Abnormal Earnings Model					3.00%	
		Arnott and Bernstein	2002	1810-2001	Fundamentals - Div Yld + Growth					2.40%	
		Constantinides	2002	1872-2000	Historical Returns & Fundamentals - P/D & P/E					6.90%	
		Cornell	1999	1926-1997	Historical Returns & Fundamental GDP/Earnings		3.50%	5.50%	4.50%	4.50%	
		Easton, Taylor, et al	2002	1981-1998	Residual Income Model					5.30%	
		Fama French	2002	1951-2000	Fundamental DCF with EPS and DPS Growth		2.55%	4.32%		3.44%	
		Harris & Marston	2001	1982-1998	Fundamental DCF with Analysts' EPS Growth					7.14%	
		McKinsey	2002	1962-2002	Fundamental (P/E, D/P, & Earnings Growth)		3.50%	4.00%		3.75%	
		Siegel	2005	1802-2001	Historical Earnings Yield					2.50%	
		Grabowski	2006	1926-2005	Historical and Projected		3.50%	6.00%	4.75%	4.75%	
		Maheu & McCurdy	2006	1885-2003	Historical Excess Returns, Structural Breaks,		4.02%	5.10%	4.56%	4.56%	
		Bostock	2004	1960-2002	Bond Yields, Credit Risk, and Income Volatility		3.90%	1.30%	2.60%	2.60%	
		Bakshi & Chen	2005	1982-1998	Fundamentals - Interest Rates					7 31%	
		Donaldson Kamstra & Kramer	2005	1952-2004	Fundamental Dividend vld Returns & Volatility		3.00%	4 00%	3 50%	3 50%	
		Campbell	2008	1982-2007	Historical & Projections (D/P & Earnings Growth)		4 10%	5 40%	515070	4 75%	
		Best & Byrne	2000	Projection	Fundamentals - Div Vld + Growth		4.1070	5.4070		2.00%	
		Fernandez	2001	Projection	Paquirad Equity Pick Pramium					2.00%	
		Pellandez	2007	Projection	Formings Viold TIDS					4.00%	
		Cional Dathink EDD	2008	Projection	Earlings Field - FIFS					5.2270	
		Siegel - Kelnink EKP	2011	Projection	Neuroline devide 2.50/ Leng Trans Trans World					5.50%	
		Kroll (Dull & Phelps)	2023	Projection	Normalized with 3.5% Long-Term Treasury Yield	<b>D</b> .				5.50%	
		Mschchowski - VL - 2014	2014	Projection	Fundamentals - Expected Return Minus 10-Year Trea	sury Rate				5.50%	
		American Appraisal Quarterly ERP	2015	Projection	Fundamental Economic and Market Factors					6.00%	
		JP Morgan Asset Management	2025	Projection	Equity Return of 6.70% and Long-Term Bond of 3.80	1%0				3.90%	
		Market Risk Premia - 3-1-25	2025	Projection	Fundamental Economic and Market Factors					2.85%	
		KPMG	2025	Projection	Fundamental Economic and Market Factors					5.00%	
		Damodaran 5-1-25	2025	Projection	Fundamentals - Implied from FCF to Equity Model (1	railing 12 mo	nth, with ad	justed payo	ut)	4.41%	
		John Campbell	2001	1860-2000	Historical & Projections (D/P & Earnings Growth)	Arithmetic	3.00%	4.00%	3.50%	3.50%	
				Projected for 75 Year	s	Geometric	1.50%	2.50%	2.00%	2.00%	
		Peter Diamond	2001	Projected for 75 Year	Fundamentals (D/P, GDP Growth)		3.00%	4.80%	3.90%	3.90%	
		John Shoven	2001	Projected for 75 Year	Fundamentals (D/P, P/E, GDP Growth)		3.00%	3.50%	3.25%	3.25%	
0	C	Median									3.95%
Surveys	Surveys	New York Fed	2015	Eine Vee	Sumary of Wall Streat Finnes					5 709/	
		New York Fed	2015	Five-Year	Survey of Wall Street Firms		1.000/			5.70%	
		Survey of Financial Forecasters	2025	10-Year Projection	Median Projected Equity Return of 7.00% and Long-	Ferm Bond of	4.00%			3.00%	
		Duke - CFO Magazine Survey	2025	10-Year Projection	Approximately 300 CFOs Expected S&P 500 Return	of 9.7% and F	usk-Free Ra	ate of 4.5%		5.20%	
		Fernandez - Academics, Analysts, and Companie	2025	Long-Term	Survey of Academics, Analysts, and Companies					5.50%	5.250/
Duilding Dlaal	Duilding Disals	Median									5.55%
Bunuing Block	Building Block	The stress of Chara	2015	Destantion	United and the Markel (D/D & Francisco Country)	A			( 220/	5 210/	
1		1000tsoll allu Clicii	2015	riojection	ristorical supply would (D/P & Earnings Growth)	Commetrie			0.22%	J.21%	
1		Chan Bathink EDD	2010	20 Veer Besteri	Combination Symphy Madel (Historie and Do. 1. 1.	Conterio			4.20%	4.000/	
1		Unen - Rethink ERP	2010	20- i car Projection	Computer Supply Model (Historic and Projection)	Geometric				4.00%	
		IIImanen - Kethink EKP	2010	Projection	Current Supply Model (D/P & Earnings Growth)	Geometric			4 (20)	5.00%	
1		Grinoid, Kröner, Siegel - Kethink EKP	2011	Projection	Current Supply Model (D/P & Earnings Growth)	Arithmetic			4.03%	4.12%	
		Median				Geometric			3.00%		4 06%
Mean	Mean	womail									4.00%
Median	Median										4.00 %
meuran	meutan										4./070

CAPM Study

		Publication	Time Period		Return	Range	Midpoint		Median
Category	Study Authors	Date	Of Study	Methodology	Measure Low	High	of Range	Mean	
listorical Risk P	Premium								
	Ibbotson	2016	1928-2015	Historical Stock Returns - Bond Returns	Arithmetic			6.00%	
					Geometric			4.40%	
	Damodaran	2025	1928-2024	Historical Stock Returns - Bond Returns	Arithmetic			7.00%	
					Geometric			5.44%	
	Dimson, Marsh, Staunton Credit Suisse Report	2025	1900-2024	Historical Stock Returns - Bond Returns	Geometric			5.10%	
	Median								5.59
v Anto Modele (	(Puzzla Pasaanah)								
Ante Models (	Siegel - Rethink FRP	2011	Projection	Real Stock Returns and Components				5 50%	
	Kroll (Duff & Phelps)	2025	Projection	Normalized with 3.5% Long-Term Treasury Yield				5.50%	
	Mschchowski - VL - 2014	2014	Projection	Fundamentals - Expected Return Minus 10-Year Treasury Ra	te			5.50%	
	American Appraisal Quarterly ERP	2015	Projection	Fundamental Economic and Market Factors				6.00%	
	JP Morgan Asset Management	2025	Projection	Equity Return of 6.70% and Long-Term Bond of 3.80%				3.90%	
	Market Risk Premia - 3-1-25	2025	Projection	Fundamental Economic and Market Factors				2.83%	
	KPMG	2025	Projection	Fundamental Economic and Market Factors				5.00%	
	Damodaran 5-1-25	2025	Projection	Fundamentals - Implied from FCF to Equity Model (Trailing	12 month, with adjusted	payout)		4.41%	
	Median								5.25
irveys									
	New York Fed	2015	Five-Year	Survey of Wall Street Firms				5.70%	
	Survey of Financial Forecasters	2025	10-Year Projection	Median Projected Equity Return of 7.00% and Long-Term Bo	nd of 4.00%			3.00%	
	Duke - CFO Magazine Survey	2025	10-Year Projection	Approximately 300 CFOs Expected S&P 500 Return of 9.7%	and Risk-Free Rate of 4.	5%		5.20%	
	Fernandez - Academics, Analysts, and Companie	2025	Long-Term	Survey of Academics, Analysts, and Companies				5.50%	
	Median								5.35%
uilding Block		2015	<b>B</b> 1 1		1 M 1		( 220)	5 9 1 9 /	
	Ibbotson and Chen	2015	Projection	Historical Supply Model (D/P & Earnings Growth)	Arithmetic		6.22%	5.21%	
		2010	20 X B		Geometric		4.20%	4.000/	
	Unen - Kethink EKP	2010	20-Year Projection	Combination Supply Model (Historic and Projection)	Geometric			4.00%	
	IImanen - Kethink EKP	2010	Projection	Current Supply Model (D/P & Earnings Growth)	Geometric		4 (20/	3.00%	
	Grinoid, Kroner, Siegel - Rethink ERP	2011	Projection	Current Supply Model (D/P & Earnings Growth)	Arithmetic		4.65%	4.12%	
	Madian				Geometric		5.60%		4.040
laan	wearan								4.00
hean									5.00%

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### CAPM Study Kroll (Duff & Phelps) Equity Risk Premium Estimates

# KROLL

For additional information of

Kroll Recommended U.S. Equity Risk Premium (ERP) and Corresponding Risk-free Rates (R<sub>1</sub>); January 2008–Present

Date	Risk-free Rate (R.)	RCA	Kroll Recommended U.S. ERP (%)	What
Current Guidance				1
AND 15-2025 - OWTLE FUR THER NOTICE"	Normanied 20-per 11 S. Treasury right	11.504	5.50	ERP
June 5, 2024 - April 14, 2025	Normalited 20- ear U.S. Treasitry weld	3.50*	5.00	ERP
alex E. 2023 - June A. 2024*	Muntured Zones U.S. Treasury web?	3.50*	5.50	FRE
October 18 2022 - Dire 7 2029*	Norman and 20 and 115 Treasury unit?	3.50*	8.00	FRE
Surse 15, 2022 - October 17, 2022*	International Phases II S. Transmitt under	3.50	5.50	R
Anal 7 (2022 - Suma 15 (2022)	Montracting 20-mar 115. Transmiss solid	3.00	5.40	P
Number 2 1977 - 2022	Mental and a second and the second se	3.00	5.50	Ede
Dependent, 2020 - Aprillo, 2022	Normalized 20-year 0.5. Treasury year	2.20	2.25	DH
aure-36 2020 - December 6, 2020	Normalized 20-jets U.S. Treasury year	2.00	0.30	Par
Mexich.25.2020 - June 23, 2020	Normalized 20-jear U.S. Treasury year	3.00	8.00	ERP
December 19, 2019 - March 24, 2020	Normalized 35-year U.S. Treasury year	3.00	5.00	ERF
september 30, 2019 - Desember 18, 2019	Normalized 25-year U.S. Treasury yeld	3.00	5,50	R
December 31, 2016 - September 29, 2019	Normalized 20-year U.S. Treasury year	3.50	5.50	ERF
September 5, 2017 - December 30, 2018	Normalized 20-year U.S. Treasury year	1.50	5.00	ERP
November 15, 2016 - September 4, 2017	Normalized 20-year U.S. Treasury year	1.50	\$.50	R
amiary 31, 2016 - November 14, 2016	Normalized 25-year U.S. Treasury year	4.00	5.60	ERF
Severtile 37, 3215	Nur and the US These a	ban-	5.00	
December 31, 2114	Normalized 24 ear U.S. Treasure read	1000	\$100	
and the second s	Name of X-see U.S. Treasury yes:	- ID	5.3	
February 26: 2013 - January 30, 2016	Normalized 20-year U.S. Treasury year	06.6	5.00	ERP
Generalitatit	Name of Street U.S. Treet, rest	4.55	\$.50	-
Source: https://www.kroll.com/-/media/cost-of-capital/k	Normalized 20-jear U.S. Treasury yells	4.00	5.50	ERP
Celottes (11, 2111	triomaticed Drives MS Tressury reli-	14.20	1.8	
Separate 30, 2011 - January 14, 2012	Normalized 20-lease LLS: Treasury yeld	4 70	5.00	ERP
	Normalized 20-year U.S. Treasury year	4.50	5.50	Ri
June 1, 2011 - June 36: 2011	Spot 20-year U.S. Treasury yeld	Spot	5.60	R
May   2011 - May 31, 2011	Normalized 20-year LLS. Theasany yeld	4.00	5.50	R
Sec. 21, 2015	Southwest U.S. Tessal, Vest	6	5.50	
Decamper 1, 2010 - Anni 30, 2011	Soci 20-year U.S. Treasury yeld	Spot	5.50	R.
June 1. 2010 - Netveniber 30. 2010	Normalized 20-lear U.S. Treason view	1.50	5.50	R
	Contraction IIS Terroritation	1	ba. 1	
Terrandore II 2023 - March 24, 2045	Cherry Margare 118 Transmission	Tread	5.50	EDO
June 1, 2009 - November 30, 2010	Short 20-year (LS, Trassure year)	Shell	8.00	Entre E
Const - and - moretunet on const	who myou do not hoppy hod	- Sper	0.00	AT.
Management 1 2000 - King the mount		1.21	510	P
November 1, 25,72 - May 51, 20,09	womasted 25-jear U.S. (reasting year	11.251	9.00	10 million
October 27, 2008 - October 31, 2008	Spot 20-year U.S. Treasury yeld	Spot	6.00	ERP
January 1, 2008 - October 26: 2008	Spot 20-year U.S. Treasury yeld	Stool	5.00	/managed

\* We recommend using the spot 20 year U.S. Treasury yield as the proxy for the risk-free rate, # the prevailing yield as of the valuation rate is higher than our U.S. normalized risk-free rate of 3.5%. This guidance is effective when developing USD-demonitrated discount: rates as of June 16, 2022 and thereafter.

"Normalized" in this context means that is months where the halofnee take is deemed to be abroximally dwill a proxy for a longer-term sustainable risk (reverse take is used.

To sem more about cost of capital several and to ensure that you are using the most recent Krolf's Glabal Cost of Capital Indust well

Source: https://indialogue.io/clients/reports/public/5d9da61986db2894649a7ef2/5d9da63386db2894649a7ef5

Docket No. 25-EKCE-294-RTS Exhibit JRW-7 Evergy Kansas Central, Inc. and Evergy Kansas South Inc.'s Rate of Return Recommendation Page 1 of 2

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	48.03%	4.64%	2.23%
Common Equity	<u>51.97%</u>	<u>10.50%</u>	<u>5.46%</u>
Total	100.00%		7.69%

Exhibit JRW-7 Evergy Kansas Central, Inc. and Evergy Kansas South Inc.'s Rate of Return Recommendation

# Docket No. 25-EKCE-294-RTS Exhibit JRW-7 Evergy Kansas Central, Inc. and Evergy Kansas South Inc.'s ROE Results Page 2 of 2

	Constant Growth D	CF	
	Mean Low	Mean	Mean High
30-Day Average	9.15%	10.32%	11.24%
90-Day Average	9.41%	10.59%	11.50%
180-Day Average	9.65%	10.82%	11.74%
Constant Growth Average	9.40%	10.58%	11.49%
	Median Low	Median	Median High
30-Day Average	9.49%	10.27%	10.99%
90-Day Average	9.77%	10.52%	11.26%
180-Day Average	9.98%	10.75%	11.47%
Constant Growth Average	9.74%	10.52%	11.24%
	CAPM		
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blu Chip Forecas Yield
Value Line Beta	11,58%	11,58%	11,59%
Bloomberg Beta	10.32%	10.31%	10.37%
Long-term Avg. Beta	10.15%	10.14%	10.21%
	ECAPM		
Value Line Beta	11.70%	11.69%	11.71%
Bloomberg Beta	10.75%	10.74%	10.78%
Long-term Avg. Beta	10.63%	10.62%	10.67%
	Risk Premium		
	Current 30-day	Near-Term Blue	Long-Term Blu
	Average Treasury	Chip Forecast	Chip Forecast
	Bond Yield	Yield	Yield
Dick Dromium Doculto	10 2706	10 2406	10 / 10%

**Bulkley ROE Results** 

	AUM (\$ in Bn)	<b>Duration of Forecast</b>	Expected Return
<b>Investment Firm</b>	12/31/2022	5-, 10-,20- Year	<b>US Large Cap Equities</b>
AQR	\$100.00	5-10 Years	5.70%
Allianz	\$1,782.64	10 Years	7.50%
Bar's	\$468.22	10 Years	7.80%
BlackRock	\$8,600.00	10 Years	7.90%
BNY Mellon	\$1,800.00	10 Years	6.40%
Callan	\$15.42	10 Years	7.25%
Capital Group	\$2,300.00	20 Years	7.20%
Citi	\$250.00	10 Years	9.50%
Cresset	\$30.00	10 Years	7.00%
Fidelity	\$3,876.00	20 Years	4.00%
Franklin Templeton	\$1,300.00	10 Years	7.90%
Invesco	\$1,409.20	10 Years	7.70%
Janney Montgomery	\$2.90	10 Years	7.50%
JPMorgan	\$2,760.00	10 - 15 Years	7.90%
Mackenzie	\$192.20	10 Years	8.20%
Morgan Stanley	\$1,300.00	7 Years	4.60%
Morningstar	\$253.60	-	7.40%
Neuberger Bergman	\$427.00	20 Years	5.79%
Northern Trust	\$1,000.00	5 Years	6.00%
Nuveen	\$1,100.00	10 Years	6.96%
PGIM	\$1,200.00	10 Years	7.76%
РІМСО	\$1,740.00	5 Years	6.80%
RBC	\$389.00	10 Years	7.85%
RVK	\$1.30	20 Years	6.75%
Schroeder	\$915.53	10 Years	9.10%
Schwab	\$755.00	10 Years	6.10%
State Street	\$3,500.00	10 Years	6.60%
T-Rowe Price	\$1,275.00	5 Years	4.90%
UBS	\$3,960.00	5 Years	4.90%
Vanguard	\$7,200.00	10 Years	5.30%
Voya	\$321.00	10 Years	6.75%
Total	\$50,224.01	10 Years	6.87%

Investment Firms' Expected U.S. Large Cap Equity Market Annual Returns 12/31/2022

Data Source: Company websites. Source documents provided in work papers.

### GDP and S&P 500 Growth Rates

### **Growth Rates**

	GDP, S&I	9 500 Price, I	EPS, and DPS		
	GDP	S&P 500	S&P 500 EPS	S&P 500 DPS	
1960	542.38	58.11	3.10	1.98	
1961	562.21	71.55	3.37	2.04	
1962	603.92	63.10	3.67	2.15	
1963	637.45	75.02	4.13	2.35	
1964	684.46	84.75	4.76	2.58	
1965	742.29	92.43	5.30	2.83	
1966	813.41	80.33	5.41	2.88	
1967	859.96	96.47	5.46	2.98	
1968	940.65	103.86	5.72	3.04	
1969	1,017.62	92.06	6.10	3.24	
1970	1,073.30	92.15	5.51	3.19	
1971	1,164.85	102.09	5.57	3.16	
1972	1,279.11	118.05	6.17	3.19	
1973	1,425.38	97.55	7.96	3.61	
1974	1,545.24	68.56	9.35	3.72	
1975	1,684.90	90.19	7.71	3.73	
1976	1,873.41	107.46	9.75	4.22	
1977	2,081.83	95.10	10.87	4.86	
1978	2,351.60	96.11	11.64	5.18	
1979	2,627.33	107.94	14.55	5.97	
1980	2,857.31	135.76	14.99	6.44	
1981	3,207.04	122.55	15.18	6.83	
1982	3,343.79	140.64	13.82	6.93	
1983	3,634.04	164.93	13.29	7.12	
1984	4,037.61	167.24	16.84	7.83	
1985	4,338.98	211.28	15.68	8.20	
1986	4,579.63	242.17	14.43	8.19	
1987	4,855.22	247.08	16.04	9.17	
1988	5,236.44	277.72	24.12	10.22	
1989	5,641.58	353.40	24.32	11.73	
1990	5,963.14	330.22	22.65	12.35	
1991	6.158.13	417.09	19.30	12.97	
1992	6,520.33	435.71	20.87	12.64	
1993	6.858.56	466.45	26.90	12.69	
1994	7.287.24	459.27	31.75	13.36	
1995	7,639.75	615.93	37.70	14.17	
1996	8,073.12	740.74	40.63	14.89	
1997	8.577.55	970.43	44.09	15.52	
1998	9,062.82	1.229.23	44.27	16.20	
1999	9,631 17	1.469.25	51.68	16 71	
2000	10.250.95	1,320.28	56.13	16.27	
2000	10,581 93	1,148.09	38.85	15.74	
2001	10,001.75	879.87	46 04	16.08	
2002	11.456.45	1 111 01	54 69	17.88	
2003	12 217 20	1 211 92	67.68	19 407	
2004	13 039 20	1 248 20	76.45	22.38	
2005	13,037.20	1 419 30	87 77	22.30	
2000	14 474 22	1,410.30	87.54	23.03	
2007	14 760 94	003 25	65 30	21.15	
2000	14,/07.00	1 115 10	50.59	20.00	
2009	15,4/0.0/	1 257 64	93.00 93.66	22.31	
2010	15,048.97	1,237.04	03.00	25.12	
2011	15,399.73	1,237.00	97.05	20.02	
2012	10,253.9/	1,420.19	102.47	30.44	
2013	10,843.20	1,040.30	107.45	30.28	
2014	17,550.09	2,038.90	113.01	J7.44 42.16	
2015	18,206.02	2,043.94	100.52	43.10	
2016	18,695.11	2,238.83	108.86	45.03	
2017	19,479.62	2,0/3.61	124.94	49.73	
2018	20,527.16	2,506.85	148.34	55.61	
2019	21,372.58	3,230.78	162.35	58.80	
2020	20,893.75	3,756.07	139.76	56.70	
2021	22,997.50	4,766.18	206.38	59.20	
2022	25,461.34	5,839.50	219.49	68.34	
2023	27,750.00	4769.83	219.70	69.69	Avera
Growth Rates	6.45	7.25	7.00	5.81	6.6

Data Sources: GDPA -http://research.stlouisfed.org/fred2/series/GDPA/downloaddata

DPS - http://pages.stern.nyu.edu/~adamodar/

### **Annual Nominal GDP Growth Rates**



Data Sources: GDPA -https://fred.stlouisfed.org/series/GDPA

### **Bulkleyl GDP Growth Rates**





Data Sources: GDPC1 - https://fred.stlouisfed.org/series/GDPCA

### **Inflation Rates**



Annual CPI Inflation Rates

Data Sources: CPIAUCSL - https://fred.stlouisfed.org/series/CPIAUCSL

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### Historical and Projected Nominal GDP Growth Rates

Historic C	GDP Growth Rat					
10-Year Average	4.59%					
20-Year Average	4.32%					
<b>30-Year Average</b>	4.65%					
40-Year Average	5.21%					
50-Year Average	6.16%					

Panal A es

Calculated using GDP data on Page 1 of Exhibit JRW-9

# Panel B **Projected GDP Growth Rates**

		Projected
	Time Frame	<b>Growth Rate</b>
Congressional Budget Office	2023-2053	3.8%
Survey of Financial Forecasters	Ten Year	4.4%
Social Security Administration	2023-2100	4.1%
<b>Energy Information Administration</b>	2023-2050	4.3%
Sources:	Average	4.15%

Congressional Budget Office, The 2023 Long-Term Budget Outlook, July 15, 2023.

U.S. Energy Information Administration, Annual Energy Outlook 2023, Table: Macroeconomic Indicators, Social Security Administration, 2023 Annual Report of the Board of Trustees of the Old-Age, Survivors, and Disability Insurance (OASDI) Program, Table VI.G4,

The 4.1% growth rate is the growth in projected GDP from 26 trillion in 2023 to \$582 trillion in 2100. https://www.philadelphiafed.org/research-and-data/Bulkleyl-time-center/survey-of-professional-forecasters/

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Cumulative Long-Term Growth of GDP, S&P 500, S&P 500 EPS, S&P 500 DPS

Data Sources: GDPA -http://research.stlouisfed.org/fred2/series/GDPA/downloaddata S&P 500, EPS and DPS - http://pages.stern.nyu.edu/~adamodar/

### **CERTIFICATE OF SERVICE**

### 25-EKCE-294-RTS

I, the undersigned, hereby certify that a true and correct copy of the above and foregoing document was served by electronic service on this 6<sup>th</sup> day of June, 2025, to the following:

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